



# Voluntary Remediation Program

West Virginia Department of Environmental Protection  
Office of Environmental Remediation

## Application Amendment

**Project Name:** Jefferson Orchards, Inc.  
**VRP #** 17031

### Record of Original Application

The undersigned party, Jefferson Orchards, Inc., previously made application to the West Virginia Department of Environmental Protection (WVDEP) on or about June 20, 2017, to enter property located at 356 Granny Smith Lane, Kearneysville WV, in Jefferson County, into the Voluntary Remediation Program. The noted application was accepted by WVDEP in correspondence dated July 6, 2017.

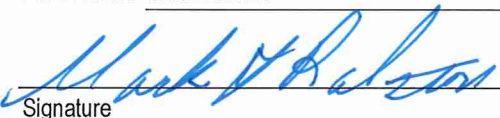
### Reason for Application Amendment

Due to change in ownership of property, the current applicant hereby requests to amend the accepted application to reflect the following changes:

- ☒ Change of Applicant  
*Complete Sections 2 and 8 of the Voluntary Remediation Program Application and provide any necessary attachments.*
- ☐ Addition of Applicant(s)  
*Complete Sections 2 and 8 of the Voluntary Remediation Program Application and provide any necessary attachments.*
- ☒ Change in Size of Property  
*Complete Sections 4, 5, and 6 of the Voluntary Remediation Program Application and provide any necessary attachments.*

### Statement of Affirmation

I certify that I am fully authorized to act on behalf of the current applicant and approve this amendment:

<b>Applicant</b>	Print Name: <u>Mark Ralston</u>	Title: <u>President</u>
	<u></u> Signature	<u>1/31/2018</u> Date
<b>Co-Applicant 1</b>	Print Name: _____	Title: _____
	_____ Signature	_____ Date
<b>Co-Applicant 2</b>	Print Name: _____	Title: _____
	_____ Signature	_____ Date



# Voluntary Remediation Program

West Virginia Department of Environmental Protection  
Office of Environmental Remediation

## Voluntary Remediation Program Application

### Section 1 – PROGRAM ELIGIBILITY

	YES	NO
1. Has the site been listed or proposed to be listed on the National Priorities List developed by the USEPA pursuant to Title I of the Comprehensive Environmental Response, Compensation, and Liability Act?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the site subject to a unilateral order issued by the USEPA pursuant to §104 through §106 of the Comprehensive Environmental Response, Compensation, and Liability Act?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Is the site subject to a unilateral enforcement order under §3008 or §7003 of the Resource Conservation and Recovery Act?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Is the site subject to a unilateral enforcement order for corrective action issued pursuant to any provision of Chapter 22 of the West Virginia Code?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Was the release which is subject to remediation created through gross negligence or willful misconduct by the applicant?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If you answered "yes" to any of the above questions, contact the Office of Environmental Remediation (304-926-0455) for assistance.

## Section 2 – APPLICANT INFORMATION

### Applicant

Applicant's Legal Name <b>Roxul USA Inc.</b>			
Aliases or Other Names By Which Applicant Is Known or Does Business <b>Roxul, Rockwool</b>			
Address <b>4594 Cayce Road</b>		City <b>Byhalia</b>	State <b>MS</b>
Zip Code <b>38611</b>			
Type of Entity <input checked="" type="checkbox"/> Private Business <input type="checkbox"/> Non-Profit Corporation <input type="checkbox"/> Federal Government <input type="checkbox"/> State Government <input type="checkbox"/> Local Government <input type="checkbox"/> Other:			
Relationship to Property <input checked="" type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Prospective Purchaser <input type="checkbox"/> Prospective Operator <input type="checkbox"/> Other:			
Contact Name <b>Kenneth J. Cammarato</b>		Contact Title <b>VP/ General Counsel</b>	
Phone <b>(662) 851-4734</b>	Alternate Phone <b>(662) 420-9328</b>	Email <b>ken.cammarato@roxul.com</b>	

### Co-Applicant 1 (if applicable)

Co-Applicant's Legal Name			
Aliases or Other Names By Which Co-Applicant Is Known or Does Business			
Address		City	State
Zip Code			
Type of Entity <input type="checkbox"/> Private Business <input type="checkbox"/> Non-Profit Corporation <input type="checkbox"/> Federal Government <input type="checkbox"/> State Government <input type="checkbox"/> Local Government <input type="checkbox"/> Other:			
Relationship to Property <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Prospective Purchaser <input type="checkbox"/> Prospective Operator <input type="checkbox"/> Other:			
Contact Name		Contact Title	
Phone	Alternate Phone	Email	

### Co-Applicant 2 (if applicable)

Co-Applicant's Legal Name			
Aliases or Other Names By Which Co-Applicant Is Known or Does Business			
Address		City	State
Zip Code			
Type of Entity <input type="checkbox"/> Private Business <input type="checkbox"/> Non-Profit Corporation <input type="checkbox"/> Federal Government <input type="checkbox"/> State Government <input type="checkbox"/> Local Government <input type="checkbox"/> Other:			
Relationship to Property <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input type="checkbox"/> Prospective Purchaser <input type="checkbox"/> Prospective Operator <input type="checkbox"/> Other:			
Contact Name		Contact Title	
Phone	Alternate Phone	Email	

### Billable Party

Billable Party's Name <b>Environmental Resources Management</b>		Phone <b>304-757-4777</b>	
Address <b>204 Chase Drive</b>		City <b>Hurricane</b>	State <b>WV</b>
Zip Code <b>25526</b>			
Contact Name <b>David Connelly</b>		Contact Title <b>Licensed Remediation Specialist</b>	

### Legal Right to Perform Work Required

One or more of the following forms of proof of the applicant's legal right to perform the work required is attached to the application:	
<input checked="" type="checkbox"/> Property Deed	<input type="checkbox"/> Property Access Agreement

Financial Capabilities	
<p>Provide a brief description of the applicant's financial capabilities to successfully complete the voluntary remediation and satisfy any contractual obligations entered into by the applicant that relate to the voluntary remediation.</p> <p><b>Roxul is a global leader in the manufacture of stone wool insulation, which is produced from volcanic rock. They currently operate 27 factories across three continents (Europe, North America, and Asia), and have a global network of sales offices, distributors, and partners. Total group net sales for the company in 2016 were EURm 2,202. A copy of Roxul's 2016 Annual Report is included as Attachment 2.</b></p>	
<p>One or more of the following forms of proof of the applicant's financial capability is attached to the application.</p> <p> <input checked="" type="checkbox"/> Annual Report or Prospectus for a Publicly Held Company           <input type="checkbox"/> Letter of Credit from a Financial Institution  <input type="checkbox"/> Grant Award           <input type="checkbox"/> Other:         </p>	
<p>Is a party other than the applicant providing the proof of financial capability?</p>	
<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Yes	Demonstrate the relationship to the applicant.
Confidentiality Claim	
<p>Information obtained by WVDEP for the Voluntary Remediation Program is available to the public unless the applicant demonstrates that the information or parts thereof, if made public, would divulge methods, processes, or activities entitled to protection as trade secrets (any information protected from disclosure under WV Code §29B-1-4(1)).</p> <p> <input type="checkbox"/> Applicant asserts a confidentiality claim.           <input checked="" type="checkbox"/> Applicant does not assert a confidentiality claim.         </p>	
<p>If asserting a confidentiality claim, specify the items for which confidentiality is being claimed.</p>	



## Section 3 – TECHNICAL CAPABILITIES

### LRS Contact Information

LRS Name		Company		LRS Number	
Address			City	State	Zip Code
Phone	Alternate Phone		Email		

### Experience

Has the LRS previously managed West Virginia Voluntary Remediation Program projects?			
<input type="checkbox"/> Yes	List the three most recent projects that the LRS has managed.		
	<b>VRP #</b>	<b>Project Name</b>	<b>COC Issued</b>
			<input type="checkbox"/>
			<input type="checkbox"/>
<input type="checkbox"/> No	Provide a brief description of any experience applicable to this project.		

## Section 4 – SITE DESCRIPTION

### Physical Location

Site Name <b>Roxul USA, Inc.</b>			Size (acres) <b>56</b>	
Address <b>365 Granny Smith Lane</b>		City <b>Kearneysville</b>	Zip Code <b>25430</b>	County <b>Jefferson</b>
Driving Directions (if necessary)				

### GIS Data

Collection Point <input type="checkbox"/> Center of Site <input checked="" type="checkbox"/> Main/Front Door <input type="checkbox"/> Main Entrance/Front Gate <input type="checkbox"/> Other:			
Latitude (degrees/minutes/seconds) <b>39°22'34.59"N</b>	Longitude (degrees/minutes/seconds) <b>77°52'49.84"W</b>	Horizontal Datum <b>NAD 1983</b>	Accuracy (≤12.2 meters required) <b>1.59 meters</b>

### Additional Locational Data

<input checked="" type="checkbox"/> At least one site map identifying site boundaries is attached to the application (required).
If necessary, provide a brief description of any other identifying information that will serve to clearly and concisely identify the property.

### Legal Description

Provide tax map information for each tax map parcel within the site boundaries. Attach a legal property description for each parcel.						
District	Address/Description	Map No.	Parcel No.	Deed Book	Page No.	Acres
Middleway	365 Granny Smith Lane	12	Part of Parcel 1	284	460	194.70

### Survey

<input checked="" type="checkbox"/> A survey of the property has been made and is attached to the application.
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### Property Owner

<input checked="" type="checkbox"/> Applicant is property owner.			
<input type="checkbox"/> Owner's Name <b>Roxul USA, Inc</b>			
Address <b>4594 Cayce Rd.</b>		City <b>Bayhalia</b>	State <b>MS</b>
Contact Name <b>Kenneth J. Cammarato</b>		Contact Title <b>VP/ General Counsel</b>	
Phone <b>(662) 851-4734</b>	Alternate Phone <b>(662) 420-9328</b>	Email <b>ken.cammarato@roxul.com</b>	
<input type="checkbox"/> The site has more than one current property owner, and additional property owner information is attached to the application.			

### Operator

<input type="checkbox"/> n/a <input checked="" type="checkbox"/> Applicant is operator. <input type="checkbox"/> Property owner is operator.			
<input type="checkbox"/> Operator's Name			
Address		City	State
Contact Name		Contact Title	
Phone	Alternate Phone	Email	
<input type="checkbox"/> The site has more than one current operator, and additional operator information is attached to the application.			

## Section 5 – EXISTING ENVIRONMENTAL INFORMATION

### Site Identification

List all WVDEP and USEPA identification numbers assigned to the site (solid waste, UST/LUST, CERCLIS, RCRIS, UIC, etc.).

Issuing Agency	Type	Identification Number
USEPA	N/A	
WVDEP	N/A	

### Environmental Permits

List all past, present, and pending permits issued by WVDEP or USEPA relating to the site.

Issuing Agency	Type	Permit ID	Issue Date	Expiration Date
USEPA	N/A			
WVDEP	N/A			

### Site Assessment

Have any environmental site assessments, sample collections, or analyses been performed on the site?

☒ Yes ☐ No

The following environmental site assessments, sample collections, or analyses have been performed and are attached to the application:

☒ Phase I ☒ Phase II ☐ Other:

Is the site assessment complete?

☐ Yes

☒ No

State the additional site assessment work to be addressed under the Voluntary Remediation Agreement.

**Soil assessment complete. Further assessment of groundwater anticipated.**

### Past Proceedings

Has the property (or any activity conducted on the property) ever been the subject of an administrative (e.g. consent order), civil, or criminal investigation related to protection of the environment?

☒ No

☐ Yes

Provide a brief explanation and dates of actions.

## Section 6 – REMEDIATION OBJECTIVES

### Post-Remediation Use

Future Property Use (check all that apply)

- ☐ Agricultural    ☐ Commercial    ☒ Industrial    ☐ Recreational    ☐ Residential    ☐ School    ☐ Vacant  
☐ Unknown    ☐ Other:

### Redevelopment

☒ In Progress

☐ Imminent

☐ n/a

Provide a brief description of redevelopment plans.

**A stone insulation manufacturing facility is currently being developed on the adjacent parcel of land, which is already participating in the VRP. No construction is currently planned for the additional land being entered into the VRP; however the limits of disturbance (LOD) extend onto limited portions of this land.**

## Section 8 – STATEMENT OF AFFIRMATION

I certify that I am fully authorized to act on behalf of the applicant. I affirm that the information provided in this application and its attachments, to the best of my knowledge and belief, is true, complete, and accurate. Upon approval of this amended application, I will execute a Voluntary Remediation Agreement (VRA) Modification within thirty-one (31) days of the date of WVDEP's acceptance notification.

Applicant

Print Name: Kenneth J. Cammarato

Title: VP/ General Counsel

  
Signature

Feb 7, 2018  
Date

Co-Applicant 1

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Co-Applicant 2

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## ATTACHMENTS

Indicate the items attached to the application.

### Required Attachments

- ☒ Proof of Legal Right to Perform Work Required (Section 2)
- ☒ Proof of Financial Capability (Section 2)
- ☒ Site Map(s) (Section 4)
- ☒ Legal Property Description(s) (Section 4)
- ☒ Conceptual Site Model Worksheet

### Conditional Attachments

- ☒ Survey of Property (Section 4)
- ☐ Additional Property Owner Information (Section 4)
- ☐ Additional Operator Information (Section 4)
- ☒ Environmental Site Assessments (Section 5)
- ☐ Other:
- ☐ Other:
- ☐ Other:
- ☐ Other:
- ☐ Other:

*Proof of Legal Right to Perform Work Required*  
*(Property Deed)*

Jefferson County  
Jacqueline C Shadle, Clerk  
Instrument 201700017663  
10/25/2017 @ 03:46:11 PM  
DEED  
Book 1197 @ Page 652  
Pages Recorded 5  
Recording Cost \$ 46.00  
Transfer Tax \$ 10507.20  
Farm Land Tax \$ 5233.60

SPILMAN THOMAS & BATTLE PLLC  
PO BOX 273  
CHARLESTON WV 25321-0273

## DEED

THIS **DEED**, made and entered into this 20th day of October, 2017, by and between **JEFFERSON ORCHARDS, INC.**, a West Virginia corporation, party of the first part, and **ROXUL USA INC.**, a Delaware corporation, party of the second part.

WITNESSETH: That for and in consideration of the sum of FIVE DOLLARS (\$5.00) cash in hand paid, the receipt of which is hereby acknowledged and other good and valuable consideration passing from the said party of the second part to the said party of the first part, the receipt of which is also hereby acknowledged, the said party of the first part does hereby grant, bargain, sell and convey unto the said ROXUL USA, Inc., a Delaware corporation, **IN FEE SIMPLE**, with covenants of **SPECIAL WARRANTY**, all that certain lot or parcel of land, with the improvements thereon and the appurtenances thereunto belonging, situate, lying and being in Ranson District, Jefferson County, West Virginia, and more particularly described as follows:

**See Exhibit "A"**

**TOGETHER WITH** any and all of the said party of the first part's right, title and interest, if any, in and to the minerals, substances and things of any kind, nature or description within or underlying the property, whether now known or unknown, including the coal, oil, gas and other hydrocarbons, coalbed methane, ores, metals, sand, stone, and all voids, passageways, spaces and strata thereunder.

**SUBJECT TO AND TOGETHER WITH**, all those rights, reservations, restrictions, covenants, conditions, easements and rights-of-way of record.

**FURTHER SUBJECT TO** the lien for real property taxes for the year 2018, which said taxes shall be timely paid by the party of the first part as further described below, and the party of the second part shall thereafter reimburse the party of the first part for its proportionate share which pertains to the property hereby conveyed. The property hereby conveyed is assessed for taxation purposes for the year 2017 upon the Land Books for Ranson Corporation District, Jefferson County, West Virginia, as part of the following:

JEFFERSON ORCHARD [sic] INC.  
2017 Tax Ticket #24543  
Tax Account #25078  
Map 12, Parcel 1  
400.36 A Kearneysville-Brown  
Tax per half year: \$4,268.82

The party of the first part and the party of the second part covenant and agree that: (a) until such time as a separate ad valorem tax ticket shall be levied and assessed with regard to



the property herein conveyed, and so long as said property is assessed as part of one or more larger parcels owned by party of the first part, party of the first part shall pay such taxes prior to delinquency and in order to receive all available discounts; and (b) party of the second part shall within fifteen (15) business days after party of the first part's receipt of a paid full of half year receipt for said taxes, reimburse to the party of the second part, that portion of such taxes which were attributable to the property herein conveyed and the improvements thereon.

**DECLARATION OF CONSIDERATION OR VALUE**

Under the penalties of fine and imprisonment as provided by law, the undersigned Grantor hereby declares that the total consideration of the property transferred by the document to which this declaration is appended is \$2,387,510.08.

**CERTIFICATION OF EXEMPTION FROM WITHHOLDING TAX**

Under the penalties of fine and imprisonment as provided by law, the undersigned Grantor hereby declares that it claims exemption from the tax withholding requirements of West Virginia Code § 11-21-71b for the reason that the Grantor is a resident entity as defined in said section of the West Virginia Code.

[Signatures and Acknowledgments on the Following Pages]

WITNESS the following signature and seal:

JEFFERSON ORCHARDS, INC., a West  
Virginia corporation

By: Ronald Slonaker  
Ronald Slonaker, Secretary-Treasurer

STATE OF WEST VIRGINIA,

COUNTY OF BERKELEY, TO-WIT:

I, Kelsey Swaim Miller, a notary public of said county, do certify that Ronald Slonaker, Secretary-Treasurer of Jefferson Orchards, Inc., a West Virginia corporation, who signed the writing hereto annexed, bearing date as of the 20th day of October, 2017, has this day in my said county, before me, acknowledged the same to be the act and deed of said corporation.

Given under my hand this 20th day of October, 2017.

My commission expires: June 18, 2018.

Kelsey Swaim Miller  
Notary Public

(NOTARIAL SEAL)



After recording mail to:

ROXUL USA, Inc.  
4594 Cayce Road  
Byhalia, Mississippi 38611

This instrument was prepared by Kenneth J. Barton, Jr., Attorney at Law, 1250 Edwin Miller Boulevard, Suite 300, Martinsburg, West Virginia 25404.

**EXHIBIT A**  
**LEGAL DESCRIPTION**

DESCRIPTION OF TRACT 1  
JEFFERSON ORCHARDS, INC.  
(PLAT BOOK 25, PAGE 649-652)  
RANSON CORPORATION  
JEFFERSON COUNTY, WEST VIRGINIA

BEING TRACT 1 AS RECORDED IN PLAT BOOK 25 AT PAGE 649-652 SITUATED ON THE NORTH SIDE OF THE CSX TRANSPORTATION RAILROAD AND WEST VIRGINIA ROUTE 9 LOCATED IN RANSON CORPORATION AND BEING PART OF THE PROPERTY OF JEFFERSON ORCHARD, INC. AS ACQUIRED BY DEED DATED DECEMBER 1, 1966 AND RECORDED IN DEED BOOK 284 AT PAGE 460 AMONG THE LAND RECORDS OF JEFFERSON COUNTY, WEST VIRGINIA.

BEGINNING AT 5/8" RE-BAR AND CAP SET ON THE NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD MARKING THE SOUTHEASTERLY CORNER OF THE PROPERTY NOW OR FORMERLY OF THOMAS C. BOWERS (DEED BOOK 804, PAGE 284);

THENCE DEPARTING SAID NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD AND WITH THE NORTHEASTERLY LINE OF SAID THOMAS C. BOWERS AND CONTINUING WITH THE NORTHEASTERLY LINES OF THE PROPERTY NOW OR FORMERLY OF WINSTON THREAD GILL, JR. (DEED BOOK 1085, PAGE 195) AND THE PROPERTY NOW OR FORMERLY OF JEFFERSON ORCHARDS, INC. (DEED BOOK 1046, PAGE 284);

N 24°10'38" E, 880.00 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE SOUTHERLY LINE OF THE PROPERTY NOW OR FORMERLY OF CEMETERY TRUSTEES (DEED BOOK 98, PAGE 68) MARKING AN EASTERLY CORNER OF JEFFERSON ORCHARDS, INC. (DEED BOOK 1046, PAGE 284);

THENCE WITH SAID SOUTHEASTERLY LINE OF CEMETERY TRUSTEES;

S 65°27'27" E, 230.80 FEET

TO A 5/8" RE-BAR AND CAP SET;

THENCE WITH THE EASTERLY LINE OF SAID CEMETERY TRUSTEES AND CONTINUING WITH THE EASTERLY LINE OF SAID JEFFERSON ORCHARDS, INC.;

N 01°15'02" E, 525.64 FEET

TO 5/8" RE-BAR AND CAP SET MARKING THE NORTHEASTERLY CORNER OF SAID JEFFERSON ORCHARDS, INC. AND THE SOUTHEASTERLY CORNER OF THE PROPERTY NOW OR FORMERLY OF THOMAS HODGES (DEED BOOK 184, PAGE 16);

THENCE WITH THE EASTERLY LINES OF SAID THOMAS HODGES THE FOLLOWING SIX (6) COURSES;

N 02°34'31" E, 905.31 FEET TO A 5/8" RE-BAR AND CAP SET;

N 15° 27' 25" E, 518.26 FEET TO A FENCE POST FOUND;

N 29° 38' 28" E, 1,048.36 FEET TO A FENCE POINT FOUND;

N 28° 11' 38" E, 75.44 FEET TO A RE-BAR FOUND;

N 14 ° 43' 07" E, 359.56 FEET TO A FENCE POST FOUND AND

S 74° 12' 12" E, 95.27 FEET

TO FENCE POST FOUND ON THE SOUTHERLY LINE OF THE PROPERTY NOW OR



FORMERLY OF TRUSTEES OF THE JANE SNYDER MILLER AND LIGE BENTON MILLER, JR. REVOCABLE TRUST (DEED BOOK 1098, PAGE 421);

THENCE WITH SAID SOUTHERLY, WESTERLY AND SOUTHERLY LINES OF SAID TRUSTEES OF THE JANE SNYDER MILLER AND LIGE BENTON MILLER, JR. REVOCABLE TRUST THE FOLLOWING FOUR (4) COURSES:

S 72° 30' 18" E, 1,430.06 FEET TO A FENCE POINT FOUND;

S 39° 00' 25" W, 955.43 FEET TO A FENCE POINT FOUND;

S 12°47'51" W 1,246.70 FEET TO A FENCE POST FOUND AND

S 82°59'47" E 396.54 FEET

TO A 5/8" RE-BAR AND CAP SET MARKING A WESTERLY CORNER OF JEFFERSON ORCHARDS, INC. (DEED BOOK 284, PAGE 460;

THENCE WITH THE WESTERLY LINE OF SAID JEFFERSON ORCHARDS, INC.;

S 00°01'03" W 2,606.35 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE WESTERLY SIDE OF AN EXTENDED RIGHT OF WAY OF WEST VIRGINIA ROUTE 9;

THENCE WITH SAID WESTERLY SIDE OF AN EXTENDED RIGHT OF WAY OF WEST VIRGINIA ROUTE 9 THE FOLLOWING (3) COURSES:

S 28°18'18" W 62.69 FEET TO A RE-BAR FOUND;

S 36°33'55" W 375.25 FEET TO A RE-BAR FOUND AND

S 32°30'42" W 131.99 FEET

TO A RE-BAR FOUND ON THE NORTHERLY RIGHT OF WAY LINE OF AFOREMENTIONED CSX TRANSPORTATION RAILROAD MARKING THE POINT OF A NON-TANGENT CURVE TO THE RIGHT;

THENCE WITH SAID NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD;

2,552.52 FEET ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 17,157.07 FEET AND A CHORD BEARING AND CHORD OF N 52°34'20" W, 2,550.16 FEET RESPECTIVELY, TO A 5/8" RE-BAR AND CAP SET MARKING THE POINT OF COMPOUND CURVATURE OF A CURVE TO THE RIGHT AND

37.20 FEET ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 2,831.79 FEET AND A CHORD BEARING AND CHORD OF N 47°56'05" W, 37.20 FEET RESPECTIVELY,

TO THE POINT OF BEGINNING CONTAINING 8,481,182 SQUARE FEET OR 194.70115 ACRES OF LAND.

Being a portion of the real estate conveyed by Malcolm M. Brown and Lorena H. Brown, husband and wife, to Jefferson Orchards, Inc. by deed dated December 1, 1966, of record in the office of the Clerk of the County Commission of Jefferson County, West Virginia, in Deed Book 284, page 460.

## *Proof of Financial Capabilities*

**Sales up, with productivity and pricing improvements driving profitability growth**

15 November 2017

**Highlights**

- In the first nine months of 2017 net sales increased by 5.9% in local currencies compared to the same period last year, driven primarily by good volume growth. Third quarter net sales grew by 7.6% in local currencies (Q3 2016: 1.6%).
- Year-to-date increase in input costs remained at a high level and impacted contribution margin. During Q3, the significant increase in input costs began to level out, while sales prices started to increase. This, together with high operations productivity, improved the profitability in Q3.
- In the first nine months of 2017 EBIT increased by 8% to EUR 185 million (2016: EUR 172 million) equal to a 10.7% EBIT margin (same margin level as last year). This year's Q3 EBIT was EUR 76 million against EUR 67 million last year, up 13%, with the EBIT margin reaching 12.4% (Q3 2016: 11.8%).
- Net profit for the first nine months 2017 reached EUR 134 million an improvement of EUR 12 million compared to the same period last year (2016: EUR 122 million).
- Free cash flow was at level with last year amounting to EUR 141 million (2016: EUR 140 million).
- In the first nine months of 2017 investment expenditure reached EUR 93 million (2016: EUR 91 million).
- Annualised return on invested capital reached 17.0% compared to 15.1% for the same period last year, driven by higher operational earnings and lower invested capital.



*"We're pleased with our third quarter net sales, which increased 7.6%, driven by solid performance in Europe and North America. The strong sales reflect favourable market conditions and a continued healthy demand for the top-quality stone wool products we offer. EBIT margin for the quarter is up 0.6% to a solid 12.4%, as productivity and particularly pricing improvements continue to gain momentum, and will remain in focus for us moving forward".*

CEO Jens Birgersson

**Full year Outlook 2017 updated**

- Expectation for net sales growth remain unchanged of 5-7% in local currencies.
- Updated expectation for EBIT margin from slightly above 10% to close to 11%.
- Updated forecast for investment expenditure from EUR 150 million to around EUR 135 million excluding acquisitions.

**Conference call**

The ROCKWOOL Group will host an earnings call on 15 November 2017 at 11.00 CET. To attend the conference call dial +4570223500, +44(0)2075721187 or +1 6467224972. Passcode 52916367#. The conference call will be transmitted live on [www.rockwool.com](http://www.rockwool.com).

## Main figures / key figures for the Group

	Unaudited			Audited	
	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016	FY 2016
<b>Income statement items in EUR million</b>					
Net sales	612	571	1,730	1,619	2,202
EBITDA	119	105	308	295	389
Depreciation, amortisation and write-downs	43	37	123	124	160
EBIT	76	67	185	172	229
Profit before tax	75	65	182	166	225
Profit for the period	56	49	134	122	166
<b>Balance sheet items in EUR million</b>					
Non-current assets			1,333	1,423	1,409
Current assets			771	561	591
Total assets			2,104	1,984	1,999
Equity			1,573	1,473	1,536
Non-current liabilities			145	155	128
Current liabilities			386	355	336
Net interest-bearing debt			-216	-21	-116
Net working capital			196	195	175
Invested capital			1,379	1,470	1,433
<b>Cash flow in EUR million</b>					
Cash flow from operating activities	157	147	234	230	326
Investments and acquisitions	30	21	93	91	89
Free cash flow	127	127	141	140	237
<b>Other items</b>					
Number of employees at end of period			10,805	10,418	10,414
<b>Ratios</b>					
EBITDA margin	19.4%	18.3%	17.8%	18.2%	17.7%
EBIT margin	12.4%	11.8%	10.7%	10.6%	10.4%
Return on invested capital (rolling 4 quarters)			17.0%	15.1%	15.8%
Return on equity (rolling 4 quarters)			11.7%	10.3%	11.5%
Equity ratio			74.8%	74.3%	76.8%
<b>Share information (DKK)</b>					
Earnings per share	18.8	16.8	45.5	41.5	57.2
Cash flow per share	53.8	50.0	79.9	79.3	112.2
Book value per share			531	499	518
Share capital (million)			220	220	220
Price per A share			1,567	1,159	1,192
Price per B share			1,709	1,186	1,247
Market cap (million)			35,596	25,381	26,449
Number of own shares			214,190	312,585	275,855

The ratios have been calculated in accordance with recommendations issued by the Danish Society of Financial Analysts (2015 edition).



## Management report for the period 1 January to 30 September 2017

### Global sales development

Sales growth in the first nine months of 2017 was 5.9% in local currencies mainly stemming from the flat-roof insulation sector in Western and Eastern Europe.

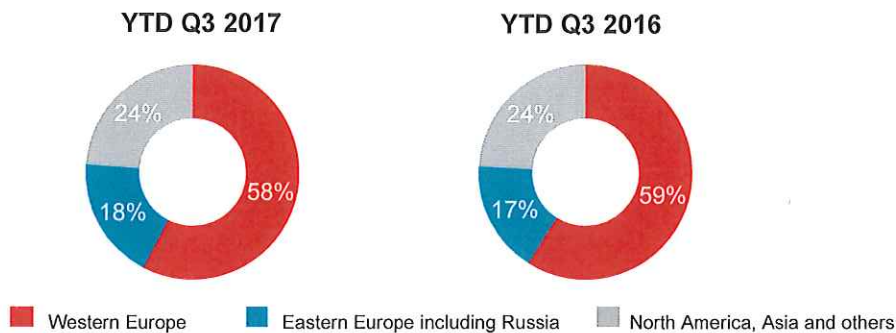
Group sales  
**+5.9%**

There was a positive currency impact of 0.9 %-points, bringing sales growth to 6.8% in reported figures for the first nine months. The positive effect was primarily due to a stronger Russian rouble compared to Q3 2016. In Q3 sales grew by 7.6% in local currencies.

In Q3, sales prices continued to pick up and efficiency in operations was high. This, in total, more than counterbalanced the negative impact from input costs in the quarter subsequently increasing contribution margin compared to last year.

### Regional sales development

#### Sales per region



In the first nine months, sales in Western Europe improved by 5.0% in local currencies and 4.4% in reported figures. We achieved growth in the most significant markets, where especially France, Germany and UK performed well. In Q3, sales grew with 8.4% in local currencies as Germany, UK and the Netherlands showed strong growth.

Sales in Western Europe  
**+5.0%**

Sales in Eastern Europe in the first nine months increased by 9.7% in local currencies and by 17.4% in reported figures, where Poland, Czech Republic, Hungary and Romania among others continued to deliver a strong performance. In Q3 sales grew by 7.3% in local currencies. Russia continued positive growth during Q3.

Sales in Eastern Europe  
**+9.7%**

In the first nine months, the rest of world sales grew by 5.4% with no effect from currencies. U.S. sales continued to show positive development with double-digit growth. Sales in Canada also performed well while sales in South East Asia are still troubled by a subdued market. In Q3, sales grew by 5.6% in local currencies, with US still growing double-digit and a good performance in Canada. In South East Asia especially Singapore struggled with a significant decrease in the project portfolio.

Sales in rest of the world  
**+5.4%**



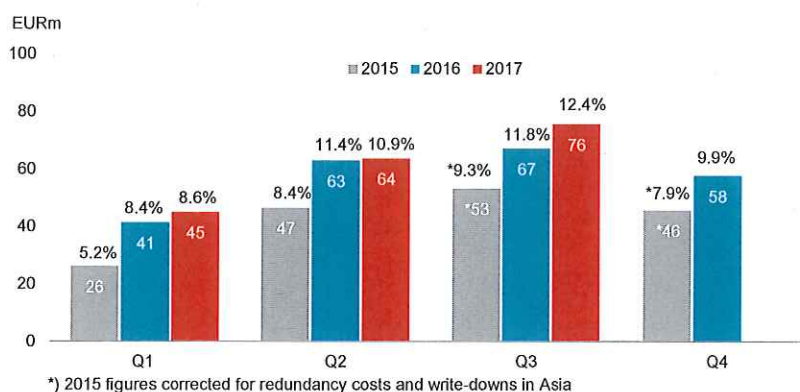
## Group profitability

EBITDA for first nine months ended at EUR 308 million, an increase of 4% compared to last year (EBITDA margin of 17.8%), with good contribution from higher sales prices and factory performance to counter the higher cost of raw materials. In Q3, EBITDA amounted to EUR 119 million, compared to EUR 105 million last year, and an EBITDA margin of 19.4% (Q3 2016: 18.3%).

EBIT for the first nine months increased by 8% and reached EUR 185 million, corresponding to a 10.7% EBIT margin, at level with last year. EBIT for Q3 was EUR 76 million equal to an EBIT margin 12.4%, a 0.6 %-points increase compared to last year. Depreciation for the period includes one-off impairments related to IT projects.

EBIT margin Q3  
**+0.6 %-points**

## EBIT & EBIT MARGIN



The effective tax rate was realised at 26% and is expected to decrease slightly in the coming quarter.

Net profit for the first nine months of 2017 amounted to EUR 134 million, which is an improvement of EUR 12 million compared to last year.

## Cash flow and balance sheet

Cash flow from operations before financial items and tax in the first nine months of 2017 was EUR 267 million, in line with last year as increased profitability almost balanced the increase in working capital coming from higher trade receivables and a planned higher stock to ease the pressure on capacity of certain production equipment.

Operational cash flow before  
financial items and tax  
**stable**

Net working capital as a percentage of annualised net sales was 8.5% compared to 8.9% last year. In absolute terms, net working capital was at the same level as last year, amounting to EUR 196 million.

Capital expenditure during the first nine months of 2017 was EUR 93 million compared to EUR 91 million last year. The largest individual investments in 2017 relate to the new Rockfon production facility in the United States, which began production in July 2017 and the refurbishment of a line in Poland.

Free cash flow was at level with last year and reached EUR 141 million.

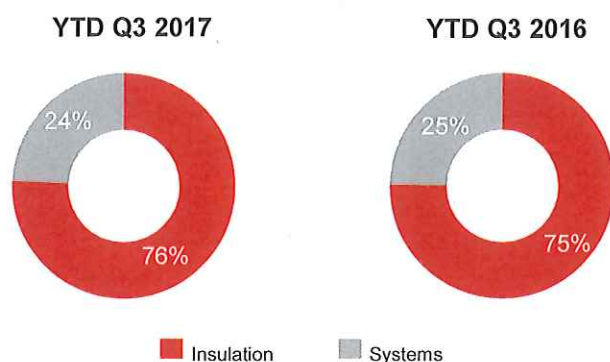
Free cash flow  
**stable**

Annualised return on invested capital reached 17.0% compared to 15.1% for the same period last year, driven by higher operational earnings and lower invested capital.

Total assets at the end of the first nine months of 2017 amounted to EUR 2,104 million. The equity ratio at the end of the period was 75%, at level with last year.

## Business segments

### Sales per business



### Key figures Insulation segment

EURm	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016
External net sales	470	432	1,309	1,217
EBIT, segment profit	59	46	129	109
EBIT margin	11.0%	9.2%	8.6%	7.8%

Sales in the Insulation segment reached EUR 1,309 million in the first nine months, which was an increase of 6.5% in local currencies and 7.6% in reported currencies. The increase was mainly carried by the building insulation segment in Western and Eastern Europe. In Q3, sales increased by 8.8% in local currencies and reached EUR 470 million, with double digit growth in building insulation in Western Europe.

Insulation sales  
**+6.5%**

The Insulation segment EBIT for the first nine months of 2017 reached EUR 129 million with an EBIT margin of 8.6%, an increase of 0.8%-points compared to the same period last year. Especially North America, UK and central Europe continues to show a higher earnings level driven by sales growth, improved pricing quality, and a better utilisation of the US factory. In Q3 Insulation EBIT amounted to EUR 59 million, up 28% from EUR 46 million last year, EBIT margin was 11.0%, an increase of 1.8 %-points compared to last year primarily due to higher sales prices and better factory performance offsetting inflation.

Insulation EBIT margin  
**8.6%**

## Key figures System segment

EURm	Q3 2017	Q3 2016	YTD	YTD
			Q3 2017	Q3 2016
External net sales	141	138	421	403
EBIT, segment profit	17	22	56	62
EBIT margin	12.0%	15.6%	13.4%	15.5%

The Systems segment's sales in the first nine months of 2017 amounted to EUR 421 million, which is an increase by 4.3% in local currencies with no exchange rate effect. In Q3, sales grew by 3.5% in local currencies, with a slow quarter in the Rockfon business in Europe and Asia.

Systems sales

**+4.3%**

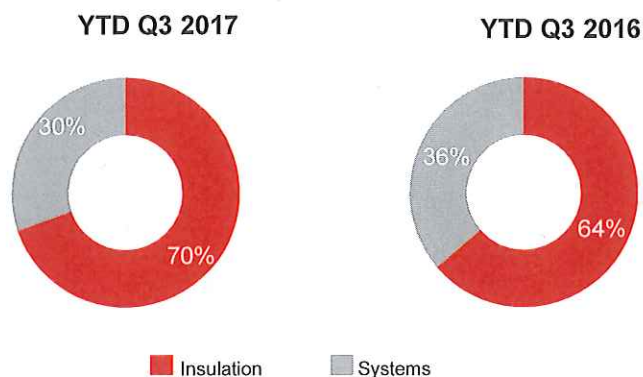
The System segment EBIT for the first nine months of 2017 reached EUR 56 million, a decrease of 10% from EUR 62 million last year. EBIT margin in Q3 reached 13.4%.

Systems EBIT margin

**13.4%**

In Q3 2017 Systems segment generated an EBIT of EUR 17 million (Q3 2016: EUR 22 million) and an EBIT margin of 12.0%. This is 3.6 %-points lower than the same period in 2016 and is mainly due to a weak quarter in Rockfon Europe and Asia and the start-up costs as expected in the new Rockfon North America factory.

## EBIT per business



## Full year Outlook 2017 updated

- Expectation for net sales growth remain unchanged of 5-7% in local currencies.
- Updated expectation for EBIT margin from slightly above 10% to close to 11%.
- Updated forecast for investment expenditure from EUR 150 million to around EUR 135 million excluding acquisitions.

### 2017 outlook overview

	24 February 2017	18 May 2017	23 August 2017	15 November 2017
Net sales	Growth of 2-4% in local currencies	Growth of 2-4% in local currencies	Growth of 5-7% in local currencies	Growth of 5-7% in local currencies
EBIT margin	Slightly above 10%	Slightly above 10%	Slightly above 10%	Close to 11%
Investments excluding acquisitions	Around EUR 130 million	Around EUR 130 million	Around EUR 150 million	Around EUR 135 million

### Further information:

Kim Junge Andersen, Chief Financial Officer  
 ROCKWOOL International A/S  
 +45 46 56 03 00

*At the ROCKWOOL Group, we are committed to enriching the lives of everyone who experiences our products. Our expertise is perfectly suited to tackle many of today's biggest sustainability and development challenges, from energy consumption to noise pollution and water scarcity to flooding. Our range of products reflects the diversity of the world's needs, supporting our stakeholders in reducing their own carbon footprint along the way.*

*Stone wool is a versatile material and forms the basis of all our businesses. With more than 10,500 passionate colleagues in more than 35 countries, we are the world leader in stone wool solutions, from building insulation to acoustic ceilings, external cladding systems to horticultural solutions, engineered fibres for industrial use to insulation for the process industry and marine & offshore.*



## Management statement

The Board of Directors and the Registered Directors have today considered and approved this interim report of ROCKWOOL International A/S for the first nine months of 2017.

This interim report, which has not been audited or reviewed by the ROCKWOOL Group auditor, has been prepared in accordance with IAS 34 Interim Financial Reporting, as approved by the EU and additional Danish interim reporting requirements for listed companies.

We believe that the accounting policies applied – which are unchanged from those of the 2016 annual report - are appropriate and that the accounting estimates made are reasonable. In our opinion, this interim report presents a true and fair view of Group's assets and liabilities, and the financial position at 30 September 2017 and the result from Group's operations and cash flow for the period 1 January to 30 September 2017.

Furthermore, we believe that the management report gives a true and fair review of the development of the Group's activities and financial matters, the result for the period and the Group's financial position as a whole as well as a description of the most significant risks and uncertainties which the Group is facing.

Besides what has been disclosed in this interim report and other interim reports in 2017, no changes in the Group's most significant risks and uncertainties have occurred relative to what was disclosed in the consolidated annual report for 2016.

15 November 2017

### The Registered Directors

Jens Birgersson

Kim Junge Andersen

### Board of Directors

Henrik Brandt

Carsten Bjerg

Søren Kähler

Thomas Kähler

Andreas Ronken

Jørgen Tang-Jensen

Lars Elmekilde Hansen

Dorte Hanne Page Larsen

Connie Enghus Theisen

## Income statement

EURm	Unaudited			Audited	
	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016	FY 2016
Net sales	611.5	570.6	1,729.9	1,619.5	2,201.8
Other operating income	1.9	1.5	5.8	5.5	12.7
<b>Operating income</b>	<b>613.4</b>	<b>572.1</b>	<b>1,735.7</b>	<b>1,625.0</b>	<b>2,214.5</b>
Raw material costs and Production material costs	209.0	199.8	597.5	538.6	736.8
Delivery costs and indirect costs	84.4	75.6	241.7	223.7	310.1
Other external costs	61.5	62.8	169.3	171.1	225.1
Personnel costs	139.8	129.4	419.0	396.3	553.3
<b>Operating costs</b>	<b>494.7</b>	<b>467.6</b>	<b>1,427.5</b>	<b>1,329.7</b>	<b>1,825.3</b>
<b>EBITDA</b>	<b>118.7</b>	<b>104.5</b>	<b>308.2</b>	<b>295.3</b>	<b>389.2</b>
Depreciation, amortisation and write-downs	43.0	37.3	122.9	123.7	159.8
<b>EBIT</b>	<b>75.7</b>	<b>67.2</b>	<b>185.3</b>	<b>171.6</b>	<b>229.4</b>
Income from investments in associated companies	0.2	0.6	0.7	1.4	2.0
Financial items	-0.6	-2.5	-4.3	-7.5	-6.8
<b>Profit before tax</b>	<b>75.3</b>	<b>65.3</b>	<b>181.7</b>	<b>165.5</b>	<b>224.6</b>
Tax on profit for the period	19.6	16.0	47.2	43.0	58.2
<b>Profit for the period</b>	<b>55.7</b>	<b>49.3</b>	<b>134.5</b>	<b>122.5</b>	<b>166.4</b>
Attributable to:					
Non-controlling interests	0.1	0.1	0.1	0.2	0.2
Shareholders in the parent company	55.6	49.2	134.4	122.3	166.2
	<b>55.7</b>	<b>49.3</b>	<b>134.5</b>	<b>122.5</b>	<b>166.4</b>
Earnings per share of DKK 10 (EUR 1.3)	2.5	2.3	6.1	5.6	7.7
Earnings per share of DKK 10 (EUR 1.3), diluted	2.5	2.3	6.1	5.6	7.6

## Statement of comprehensive income

EURm	Unaudited			Audited	
	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016	FY 2016
<b>Profit for the period</b>	<b>55.7</b>	<b>49.3</b>	<b>134.5</b>	<b>122.5</b>	<b>166.4</b>
<b>Items that will not be reclassified to the income statement:</b>					
Actuarial gains and losses of pension obligations	0.0	0.0	0.0	0.0	-15.3
Tax on other comprehensive income	0.0	0.0	0.0	0.0	1.1
<b>Items that may be subsequently reclassified to the income statement:</b>					
Exchange rate adjustments of foreign subsidiaries	-18.0	2.1	-49.1	8.6	35.2
Hedging instruments, value adjustments	0.0	-0.3	-0.4	2.6	1.1
Tax on other comprehensive income	0.0	0.2	0.1	-0.5	2.0
<b>Other comprehensive income</b>	<b>-18.0</b>	<b>2.0</b>	<b>-49.4</b>	<b>10.7</b>	<b>24.1</b>
<b>Comprehensive income for the period</b>	<b>37.7</b>	<b>51.3</b>	<b>85.1</b>	<b>133.2</b>	<b>190.5</b>
Attributable to:					
Non-controlling interests	0.1	0.1	0.1	0.2	0.2
Shareholders in the parent company	37.6	51.2	85.0	133.0	190.3
	<b>37.7</b>	<b>51.3</b>	<b>85.1</b>	<b>133.2</b>	<b>190.5</b>

## Segment reporting

YTD Q3	Unaudited							
	Insulation segment		Systems segment		Eliminations		The ROCKWOOL Group	
EURm	2017	2016	2017	2016	2017	2016	2017	2016
External net sales	1,309.4	1,216.6	420.5	402.9	0.0	0.0	1,729.9	1,619.5
Internal net sales	187.6	178.0	0.0	0.0	-187.6	-178.0	0.0	0.0
Total net sales	1,497.0	1,394.6	420.5	402.9	-187.6	-178.0	1,729.9	1,619.5
EBIT, segment profit	129.0	109.3	56.3	62.3	0.0	0.0	185.3	171.6
EBIT margin	8.6%	7.8%	13.4%	15.5%			10.7%	10.6%

## Geographical split of external net sales

EURm	Unaudited		Unaudited		FY 2016
	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016	
Western Europe	354.5	328.5	996.5	954.9	1,292.2
Eastern Europe including Russia	121.1	108.7	320.6	273.2	377.2
North America, Asia and others	135.9	133.4	412.8	391.4	532.4
Total external net sales	611.5	570.6	1,729.9	1,619.5	2,201.8

## Balance sheet

EURm	Unaudited		Audited
	Q3 2017	Q3 2016	FY 2016
<b>Assets</b>			
Intangible assets	138.7	144.8	149.4
Tangible assets	1,092.9	1,164.2	1,156.6
Other financial assets	50.2	53.0	53.4
Deferred tax assets	50.9	61.1	49.2
<b>Total non-current assets</b>	<b>1,332.7</b>	<b>1,423.1</b>	<b>1,408.6</b>
Inventories	193.1	180.7	176.0
Receivables	324.0	318.4	294.4
Cash	254.0	61.9	120.3
<b>Total current assets</b>	<b>771.1</b>	<b>561.0</b>	<b>590.7</b>
<b>Total assets</b>	<b>2,103.8</b>	<b>1,984.1</b>	<b>1,999.3</b>
<b>Equity and liabilities</b>			
Share capital	29.5	29.5	29.5
Foreign currency translation	-152.6	-130.1	-103.5
Proposed dividend	0.0	0.0	55.6
Retained earnings	1,691.4	1,571.5	1,549.8
Hedging	0.4	-0.3	0.7
Non-controlling interests	3.9	2.8	3.8
<b>Total equity</b>	<b>1,572.6</b>	<b>1,473.4</b>	<b>1,535.9</b>
Non-current liabilities	145.3	155.3	127.8
Current liabilities	385.9	355.4	335.6
<b>Total liabilities</b>	<b>531.2</b>	<b>510.7</b>	<b>463.4</b>
<b>Total equity and liabilities</b>	<b>2,103.8</b>	<b>1,984.1</b>	<b>1,999.3</b>

## Cash flow statement

EURm			Unaudited		Audited
	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016	FY 2016
EBIT	75.7	67.2	185.3	171.6	229.4
Adjustments for depreciation, amortisation and write-downs	43.0	37.3	122.9	123.7	159.8
Other adjustments	6.6	0.9	2.9	-0.5	-7.0
Change in net working capital	38.0	52.8	-44.5	-25.4	-0.7
<b>Cash flow from operations before financial items and tax</b>	<b>163.3</b>	<b>158.2</b>	<b>266.6</b>	<b>269.4</b>	<b>381.5</b>
<b>Cash flow from operating activities</b>	<b>157.1</b>	<b>147.1</b>	<b>233.5</b>	<b>230.4</b>	<b>326.0</b>
<b>Cash flow from investing activities</b>	<b>-30.0</b>	<b>-20.6</b>	<b>-93.0</b>	<b>-90.5</b>	<b>-89.1</b>
Cash flow from acquisitions	0.0	0.0	0.0	0.0	0.0
<b>Cash flow from operating and investing activities (free cash flow)</b>	<b>127.1</b>	<b>126.5</b>	<b>140.5</b>	<b>139.9</b>	<b>236.9</b>
Cash flow from financing activities	1.9	0.2	-49.3	-28.4	-24.1
<b>Change in cash available</b>	<b>129.0</b>	<b>126.7</b>	<b>91.2</b>	<b>111.5</b>	<b>212.8</b>
Cash available – beginning of period	87.7	-104.3	119.1	-88.2	-88.2
Exchange rate adjustments	1.4	2.2	7.8	1.3	-5.5
<b>Cash available – end of period</b>	<b>218.1</b>	<b>24.6</b>	<b>218.1</b>	<b>24.6</b>	<b>119.1</b>
Unutilised, committed credit facilities			430.0	456.6	497.7

## Statement of changes in the equity

EURm	Unaudited						Total
	Share capital	Foreign currency translation	Proposed dividend	Retained earnings	Hedging	Non-controlling interests	
<b>Equity 1/1 2017</b>	<b>29.5</b>	<b>-103.5</b>	<b>55.6</b>	<b>1,549.8</b>	<b>0.7</b>	<b>3.8</b>	<b>1,535.9</b>
Profit for the period				134.4		0.1	134.5
Other comprehensive income		-49.1			-0.3	0.0	-49.4
<b>Comprehensive income for the period</b>	<b>0.0</b>	<b>-49.1</b>	<b>0.0</b>	<b>134.4</b>	<b>-0.3</b>	<b>0.1</b>	<b>85.1</b>
Sale and purchase of own shares				5.5			5.5
Expensed value of options issued				1.3			1.3
Dividend paid to the shareholders			-55.6	0.4			-55.2
<b>Equity Q3 2017</b>	<b>29.5</b>	<b>-152.6</b>	<b>0.0</b>	<b>1,691.4</b>	<b>0.4</b>	<b>3.9</b>	<b>1,572.6</b>
<b>Equity 1/1 2016</b>	<b>29.5</b>	<b>-138.7</b>	<b>33.9</b>	<b>1,442.1</b>	<b>-2.4</b>	<b>2.6</b>	<b>1,367.0</b>
Profit for the period				122.3		0.2	122.5
Other comprehensive income		8.6			2.1		10.7
<b>Comprehensive income for the period</b>		<b>8.6</b>		<b>122.3</b>	<b>2.1</b>	<b>0.2</b>	<b>133.2</b>
Sale and purchase of own shares				5.4			5.4
Expensed value of options issued				1.1			1.1
Dividend paid to the shareholders			-33.9	0.6			-33.3
<b>Equity Q3 2016</b>	<b>29.5</b>	<b>-130.1</b>	<b>0.0</b>	<b>1,571.5</b>	<b>-0.3</b>	<b>2.8</b>	<b>1,473.4</b>



## Main figures in DKK million

DKKm	Unaudited				Audited
	Q3 2017	Q3 2016	YTD Q3 2017	YTD Q3 2016	FY 2016
Net sales	4,548	4,249	12,866	12,061	16,394
Depreciation, amortisation and write-downs	320	278	914	921	1,190
EBIT	563	500	1,378	1,278	1,708
Profit before tax	560	488	1,351	1,233	1,672
Profit for the period	414	369	1,000	912	1,237
Total assets			15,657	14,785	14,864
Equity			11,703	10,979	11,418
Cash flow (from operating activities)	1,168	1,099	1,737	1,717	2,427
Investments and acquisitions	223	153	692	674	663
Exchange rate	7.44	7.45	7.44	7.45	7.45

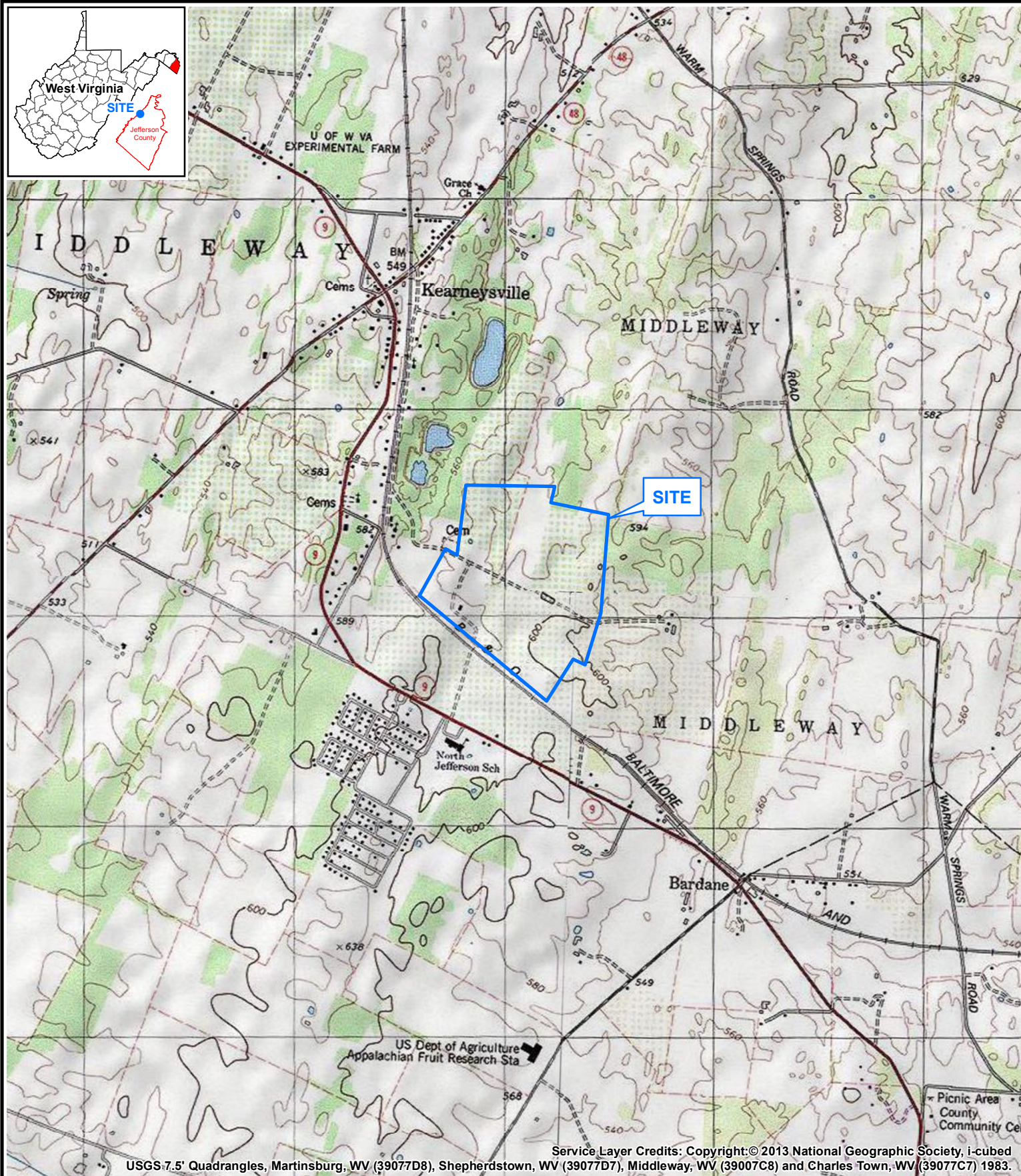
## Disclaimer

The statements on the future in this report, including expected sales and earnings, are associated with risks and uncertainties and may be affected by factors influencing the activities of the Group, e.g. the global economic environment, including interest and exchange rate developments, the raw material situation, production and distribution-related issues, breach of contract or unexpected termination of contract, price reductions due to market-driven price reductions, market acceptance of new products, launches of competitive products and other unforeseen factors.

## *Figures*

## *Site Location Map*





N



0 1,000 2,000 Feet



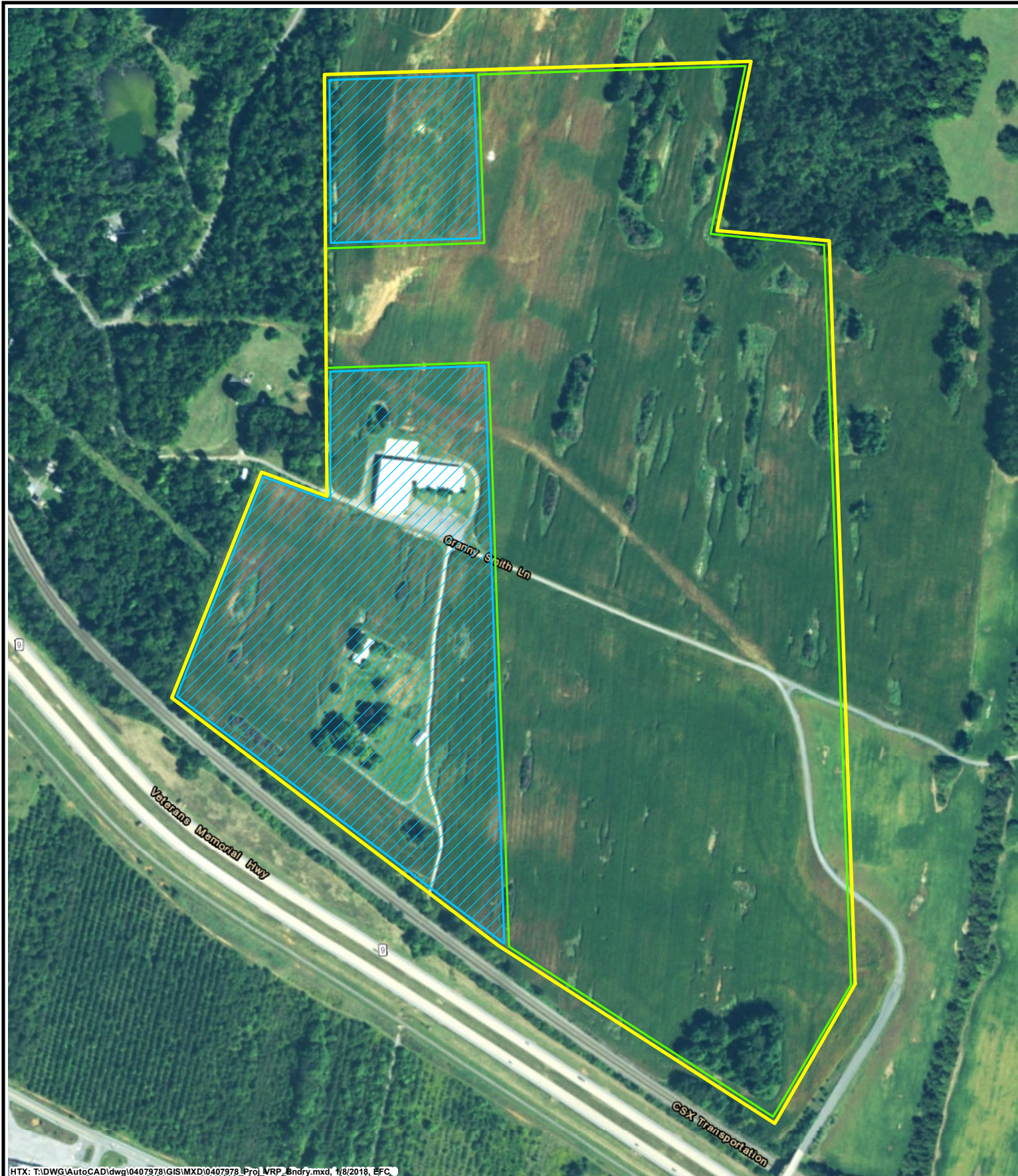
Environmental Resources Management  
 www.erm.com

## Figure 1 Site Location Map




Roxul Site  
 Project Shuttle  
 Kearneysville, West Virginia



## *Site Plan*



**Legend**

-  Project Boundary
-  VRP Site Boundary
-  Areas Being Added to VRP

**Figure 2**  
**Project Boundaries**  
Roxul Site  
Project Shuttle  
Kearneysville, West Virginia

## *Legal Property Description*



BEING THE SOUTHERN PORTION OF TRACT 1 AS RECORDED IN PLAT BOOK 25 AT PAGE 649-652 SITUATED ON THE NORTH SIDE OF THE CSX TRANSPORTATION RAILROAD AND WEST VIRGINIA ROUTE 9 LOCATED IN RANSON CORPORATION AND BEING PART OF THE PROPERTY OF JEFFERSON ORCHARD, INC. AS ACQUIRED BY DEED DATED DECEMBER 1, 1966 AND RECORDED IN DEED BOOK 284 AT PAGE 460 AMONG THE LAND RECORDS OF JEFFERSON COUNTY, WEST VIRGINIA.

BEGINNING AT 5/8" RE-BAR AND CAP SET ON THE NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD MARKING THE SOUTHEASTERLY CORNER OF THE PROPERTY NOW OR FORMERLY OF THOMAS C. BOWERS (DEED BOOK 804, PAGE 284);

THENCE DEPARTING SAID NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD AND WITH THE NORTHEASTERLY LINE OF SAID THOMAS C. BOWERS AND CONTINUING WITH THE NORTHEASTERLY LINES OF THE PROPERTY NOW OR FORMERLY OF WINSTON THREAD GILL, JR. (DEED BOOK 1085, PAGE 195) AND THE PROPERTY NOW OR FORMERLY OF JEFFERSON ORCHARDS, INC. (DEED BOOK 1046, PAGE 284);

N 24°10'38" E, 880.00 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE SOUTHERLY LINE OF THE PROPERTY NOW OR FORMERLY OF CEMETERY TRUSTEES (DEED BOOK 98, PAGE 68) MARKING AN EASTERLY CORNER OF JEFFERSON ORCHARDS, INC. (DEED BOOK 1046, PAGE 284);

THENCE WITH SAID SOUTHEASTERLY LINE OF CEMETERY TRUSTEES;

S 65°27'27" E, 230.80 FEET

TO A 5/8" RE-BAR AND CAP SET;

THENCE WITH THE EASTERLY LINE OF SAID CEMETERY TRUSTEES AND CONTINUING WITH THE EASTERLY LINE OF SAID JEFFERSON ORCHARDS, INC.;

N 01°15'02" E, 525.64 FEET

TO 5/8" RE-BAR AND CAP SET MARKING THE NORTHEASTERLY CORNER OF SAID JEFFERSON ORCHARDS, INC. AND THE SOUTHEASTERLY CORNER OF THE PROPERTY NOW OR FORMERLY OF THOMAS HODGES (DEED BOOK 184, PAGE 16);

THENCE WITH THE EASTERLY LINE OF SAID THOMAS HODGES;

N 02°34'31" E, 821.41 FEET

TO A 5/8" RE-BAR AND CAP SET;

THENCE THROUGH TRACT 1, JEFFERSON ORCHARDS, INC.;

N 89°59'05" E, 1,480.30 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE WESTERLY LINE OF THE PROPERTY NOW OR FORMERLY OF TRUSTEES OF THE JANE SNYDER MILLER AND LIGE BENTON MILLER, JR. REVOCABLE TRUST (DEED BOOK 1098, PAGE 421);

THENCE WITH SAID WESTERLY AND SOUTHERLY LINES OF SAID TRUSTEES OF THE JANE SNYDER MILLER AND LIGE BENTON MILLER, JR. REVOCABLE TRUST;

S 12°47'51" W 518.53 FEET TO A FENCE POST FOUND AND

S 82°59'47" E 396.54 FEET

TO A 5/8" RE-BAR AND CAP SET MARKING A WESTERLY CORNER OF JEFFERSON ORCHARDS, INC. (DEED BOOK 284, PAGE 460);

THENCE WITH THE WESTERLY LINE OF SAID JEFFERSON ORCHARDS, INC.;

S 00°01'03" W 2,606.35 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE WESTERLY SIDE OF AN EXTENDED RIGHT OF WAY OF WEST VIRGINIA ROUTE 9;

THENCE WITH SAID WESTERLY SIDE OF AN EXTENDED RIGHT OF WAY OF WEST VIRGINIA ROUTE 9 THE FOLLOWING (3) COURSES:

S 28°18'18" W 62.69 FEET TO A RE-BAR FOUND;

S 36°33'55" W 375.25 FEET TO A RE-BAR FOUND AND

S 32°30'42" W 131.99 FEET

TO A RE-BAR FOUND ON THE NORTHERLY RIGHT OF WAY LINE OF AFOREMENTIONED CSX TRANSPORTATION RAILROAD MARKING THE POINT OF A NON-TANGENT CURVE TO THE RIGHT;

THENCE WITH SAID NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD;

2,552.52 FEET ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 17,157.07 FEET AND A CHORD BEARING AND CHORD OF N 52°34'20" W, 2,550.16 FEET RESPECTIVELY, TO A 5/8" RE-BAR AND CAP SET MARKING THE POINT OF COMPOUND CURVATURE OF A CURVE TO THE RIGHT AND

37.20 FEET ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 2,831.79 FEET AND A CHORD BEARING AND CHORD OF N 47°56'05" W, 37.20 FEET RESPECTIVELY,

TO THE POINT OF BEGINNING CONTAINING 5,942,851 SQUARE FEET OR 136.42909 ACRES OF LAND.



## *Conceptual Model Worksheet*



# Voluntary Remediation Program

West Virginia Department of Environmental Protection  
Office of Environmental Remediation

## Conceptual Site Model Worksheet

### Section 1 – SITE CHARACTERISTICS

#### Geologic Setting

Geologic Setting Characteristics

☐ Alluvial Setting   ☐ Fractured Rock   ☒ Karst   ☐ None Listed

#### Soil

Soil Type (check all that apply)

☐ Gravel   ☐ Sand   ☐ Silt   ☒ Clay   ☐ Fill Material

#### Groundwater

Depth to Groundwater Range (feet)

60+

Groundwater Flow Direction

W

Underlying Aquifer

☐ Confined   ☐ Perched   ☒ Unconfined   ☐ Unknown

Are there any known discharge points from the underlying aquifer?   ☐ Yes   ☒ No

Distance from Known Discharge Points to Site (miles)

#### Surface Water

List each local surface water body (lake, pond/impoundment, river, spring/seep, stream, wetlands).

Type	Name or Identifying Information	Distance from Site (feet)
Stream	Opequon Creek – west of site	16,000
Pond/Impoundment	Former quarry – west of site	500
Stream	Elk Run – southeast of site	11,000
Stream	Rattlesnake Run – northeast of site	10,500

#### Site Activities

Past or Current Site Activities

☐ Deep Mining   ☐ Injection or Extraction Wells   ☐ Monitoring Wells   ☐ Surface Mining

## Section 2 – SITE USE

### Historical Site Use

Land Use (check all that apply)

- ☒ Agricultural
 ☒ Commercial
 ☐ Industrial
 ☐ Recreational
 ☒ Residential
 ☐ School
 ☐ Vacant  
☐ Other:

List past and current property owners/operators, a description of operations, and the approximate dates of ownership/operation.

Approximate Dates	Owner/Operator Name	Description of Operations
1940 - 1966	Malcom M. Brown & Lorena H. Brown	Site was used for agricultural purposes including fruit orchards. A residential structure was reportedly constructed on the southern portion of the site during the 1960s.
1966 – 2017	Jefferson Orchards, Inc.	Site was used for agricultural purposes and fruit orchards up through October 2015, when fruit orchard operations were shut down. From 2015 to the present, seasonal agricultural activities have been ongoing at the site including cultivation of field corn and soybeans. The residence on the southern portion of the site was occupied by various residents during this timeframe. The residence was vacated in 2017.
2017 - Present	Roxul USA Inc.	Roxul purchased the site from Jefferson Orchards, Inc. on October 20, 2017. The site is currently being prepared for redevelopment as an insulation manufacturing facility.

### Current Site Use

Land Use (check all that apply)

- ☐ Agricultural
 ☐ Commercial
 ☐ Industrial
 ☐ Recreational
 ☐ Residential
 ☐ School
 ☒ Vacant  
☐ Other:

If necessary, provide additional current site use description.

### Future Site Use

Land Use (check all that apply)

- ☐ Agricultural
 ☒ Commercial
 ☒ Industrial
 ☐ Recreational
 ☐ Residential
 ☐ School
 ☐ Vacant  
☐ Unknown
 ☐ Other:

If necessary, provide additional future site use description.

### Historical Adjacent Property Use

Land Use (check all that apply)

- ☒ Agricultural
 ☒ Commercial
 ☐ Industrial
 ☐ Recreational
 ☒ Residential
 ☐ School
 ☐ Vacant  
☐ Other:

If necessary, provide additional historical adjacent property use description.

Properties adjacent to the north, east, and west of the site have historically been used for agricultural and residential purposes. A CSXT rail line and State Route 9 are located south of the site. The CSXT rail line was formerly owned by the Baltimore and Ohio Railroad company and has been present since the late 1800s. State Route 9 was originally a 2-lane road that was established around the 1940s. In the mid 2000s, a new 4-lane State Route 9 was established along the southern boundary of the site.

	Land Use (check all that apply) <input checked="" type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Recreational <input type="checkbox"/> Residential <input type="checkbox"/> School <input checked="" type="checkbox"/> Vacant <input type="checkbox"/> Other:
	If necessary, provide additional current adjacent property use description.

## Section 3 – CONTAMINANT SOURCE CHARACTERISTICS

### Nature of Contamination

Provide a brief description of the nature of the contamination.

Contamination at the site generally consists of residual pesticides associated with former orchard operations.

### Evidence of Contamination

Known or Suspected Source(s) of Contamination (check all that apply)

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Analytical data                   | <input type="checkbox"/> Oil, tar, or other non-aqueous phase contaminant ( $\geq 1,000$ sq ft) |
| <input type="checkbox"/> Free product or sheen on groundwater surface | <input type="checkbox"/> Ponded contaminants  |
| <input type="checkbox"/> Free product or sheen on ponded water        | <input type="checkbox"/> Stained saturated soil or backfill                                     |
| <input type="checkbox"/> Free product or sheen on surface water body  | <input type="checkbox"/> Stressed biota (fish kills, stressed vegetation, etc.)                 |
| <input type="checkbox"/> Odor   |   |
| <input type="checkbox"/> Other:                                       |   |

### Source(s) of Contamination

Known or Suspected Source(s) of Contamination (check all that apply)

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Aboveground Storage Tank System (AT)   | <input type="checkbox"/> Drums or Storage Containers (DS)   | <input type="checkbox"/> Surface Spill or Discharge (SD)      |
| <input type="checkbox"/> Adjacent Property (AP)   | <input type="checkbox"/> Industrial Accident (IA)           | <input type="checkbox"/> Underground Storage Tank System (UT) |
| <input type="checkbox"/> Burial or Dumping of Wastes (BD)   | <input type="checkbox"/> Routine Industrial Operations (IO) | <input checked="" type="checkbox"/> Unknown (UK)              |
| <input checked="" type="checkbox"/> Other (OT): <u>Previous application of pesticides associated with fruit orchard operations.</u> |   |   |

### Contaminants

For each contaminant, indicate: Source(s) of contamination as labeled above (A, B, C, etc.)  
Known (K) and suspected (S) contamination for each media affected

Contaminant	Source(s)	Soil	Groundwater	Surface Water	Sediments	Air
<i>Example</i>	<i>BD, IO</i>	<i>K</i>	<i>K</i>	<i>S</i>		
Chlorinated Solvents						
Dioxins						
Metals						
PCBs						
Pesticides / Herbicides	OT	K				
Petroleum						
SVOCs						
VOCs	UK		K			
Other:						
Other:						
Other:						
Other:						

## Section 4 – INTERIM REMEDIAL ACTIONS

### Interim Remedial Actions

Are there any interim remedial actions that have or will take place on the site?						
<input type="checkbox"/> No						
<input checked="" type="checkbox"/> Yes		Specify the remedial actions.				
		<b>Remedial Action</b>	<b>Planned</b>	<b>Initiated</b>	<b>Completed</b>	<b>n/a</b>
		Containing contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Excavating contaminated soil	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Providing temporary water supplies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Recovering free product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Removing regulated substance from storage tank(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Removing storage tank(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Section 5 – EXPOSURE MEDIA AND TRANSPORT PATHWAYS

### Media

Affected or Potentially Affected Media (check all that apply)

☒ Soil   ☒ Groundwater   ☐ Surface Water   ☐ Sediments   ☐ Air

### Transport Mechanisms

Identify contaminant transport mechanisms.

Contaminant	Erosion/Runoff	Fugitive Dust	Leaching	Volatilization
Pesticides / Herbicides	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Local Water Supplies

Indicate the supply for each local water need and the distance of the supply from the site.

Local Water	Surface	Downstream Distance (feet)	Well	Downgradient Distance (feet)
Public Water System	<input type="checkbox"/>		<input checked="" type="checkbox"/>	3,500
Private Residential	<input type="checkbox"/>		<input checked="" type="checkbox"/>	500
Agricultural	<input type="checkbox"/>		<input checked="" type="checkbox"/>	250
Industrial / Commercial	<input type="checkbox"/>		<input type="checkbox"/>	

Is the groundwater connected to or part of an aquifer that serves as a source of drinking water?   ☒ Yes   ☐ No

### Other Surface Water Use

Surface Water Use (check all that apply)

☐ Boating   ☐ Fish and Wildlife Habitat   ☐ Recreational Fishing   ☐ Subsistence Fishing   ☐ Swimming   ☒ Not Used  
☐ Other:

### Exposure Pathways

Current and Future Exposure Pathways (check all that apply)

#### Inhalation

☒ Soil Particles  
☒ Vapors released from Groundwater  
☐ Vapors released from Soil

#### Dermal Contact

☒ Groundwater  
☐ Sediments  
☒ Soil  
☐ Surface Water

#### Ingestion

☒ Groundwater  
☐ Sediments  
☒ Soil  
☐ Surface Water  
☐ Aquatic Organisms  
☐ Plants  
☐ Terrestrial Animals

### Receptors

Current and Future Receptors (check all that apply)

#### Human

☐ Residential  
☒ Commercial / Industrial  
☒ Construction / Outdoor Maintenance Worker  
☒ Recreational / Trespasser  
☐ Other:

#### Ecological

☐ Aquatic  
☐ Terrestrial

## *Site Survey*



NOTES

1. THE PROPERTY DELINEATED ON THIS PLAT IS SHOWN ON JEFFERSON COUNTY, RANSON CORPORATION DISTRICT 8 TAX MAP 12 AS PART OF PARCEL 1 AND INCLUDES THE FOLLOWING ZONING DISTRICTS: T5 URBAN CENTER (T5), T3 SUB-URBAN (T3), T2 RURAL (T2), BUSINESS SPECIAL DISTRICT (SDB) AND INDUSTRIAL SPECIAL DISTRICT (SDI)
2. THE PROPERTY SHOWN HEREON IS NOW IN THE NAME OF JEFFERSON ORCHARDS, INC. AND WAS ACQUIRED FROM MALCOLM M. BROWN AND LORENA H. BROWN BY DEED DATED DECEMBER 1, 1966 AND RECORDED IN DEED BOOK 284 AT PAGE 460 AMONG THE LAND RECORDS OF JEFFERSON COUNTY, WEST VIRGINIA.
3. THE SUBJECT PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION "ZONE X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), ON FLOOD INSURANCE RATE MAPS NOS. 54037C0020E, 54037C0110E, 54037C0130E AND 54037C0040E ALL WITH A DATE OF IDENTIFICATION OF DECEMBER 18, 2009, FOR COMMUNITY NO. 540068, IN JEFFERSON COUNTY, STATE OF WEST VIRGINIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PREMISES IS SITUATED.
4. THE TITLE REPORT WAS FURNISHED BY FIRST AMERICAN TITLE INSURANCE COMPANY, COMMITMENT NO. ST-989, HAVING AN EFFECTIVE DATE OF JULY 28, 2017 AT 8:00 A.M.
5. EASEMENTS, RESTRICTIONS, COVENANTS, CONDITIONS RIGHTS OF WAYS AND AGREEMENTS LISTED IN SCHEDULE B OF THE ABOVE REFERENCED TITLE REPORT THAT DO NOT AFFECT THE SUBJECT PROPERTY:
- A. (EXCEPTION #14) Deed from William T. Stewart and Amelia L. Stewart, his wife, to The Baltimore & Ohio Railroad Company, dated November 2, 1897, of record in Deed Book 84, page 273. NOTE: This exception applies to Parcel Three.
- B. (EXCEPTION #19) Right of Way from Mrs. Robert H. Stewart to Northern Virginia Power Company, dated March 17, 1948, of record in Deed Book 174, page 29.
- C. (EXCEPTION #21) Right of Way from Malcolm M. Brown and Lorena H. Brown to American Telephone and Telegraph Company, dated October 19, 1960, of record in Deed Book 242, page 430.
- D. (EXCEPTION #29) Deed from Jefferson Orchards, Inc. to Tackley Mill LLC dated March 4, 2005, of record in Deed Book 1005, page 60.
6. EASEMENTS, RESTRICTIONS, COVENANTS, CONDITIONS RIGHTS OF WAYS AND AGREEMENTS LISTED IN SCHEDULE B OF THE ABOVE REFERENCED TITLE REPORT THAT CANNOT BE LOCATED ON THE SUBJECT PROPERTY:
- A. (EXCEPTION #11) Deed from William T. Stewart and his wife to Allen Cole and others, as Trustees of the M. E. Church at Kearneysville, dated July 3, 1889, of record in Deed Book U, page 304. NOTE: This exception applies to Parcel Three.
- B. (EXCEPTION #12) Deed from William T. Stewart and Amelia L. Stewart, his wife, to A. D. Morris and D. Connell, dated March 26, 1890, of record in Deed Book U, page 511. NOTE: This exception applies to Parcel Three.
- C. (EXCEPTION #13) Deed from William T. Stewart and Amelia L. Stewart, his wife, to Allen Cole and others, as Trustees of the M. E. Church of Kearneysville, dated November 12, 1890, of record in Deed Book W, page 293. NOTE: This exception applies to Parcel Three.
- D. (EXCEPTION #15) Deed from William T. Stewart and Amelia L. Stewart, his wife, to The Baltimore and Ohio Railroad Company, dated October 22, 1901, of record in Deed Book 90, page 481. NOTE: This exception applies to Parcel Three.
- E. (EXCEPTION #16) Deed from H. H. Emmert, Special Commissioner to The Standard Line & Stone Company, dated May 17, 1905, of record in Deed Book 96, page 32. NOTE: This exception applies to Parcel Three.
- F. (EXCEPTION #17) Deed from Elyse Book Stewart, widow, to James E. Goins, dated July 13, 1931, of record in Deed Book 136, page 20. NOTE: This exception applies to Parcel Three. The following easements and rights of ways, the exact location of which cannot be determined without an accurate survey of the Property:
- G. (EXCEPTION #18) Right of Way from Elyse Book Stewart to Northern Virginia Power Company, (undated), recorded July 18, 1946, of record in Deed Book 165, page 400.
- H. (EXCEPTION #20) Right of Way from Malcolm M. Brown and Lorena H. Brown to American Telephone and Telegraph Company, dated August 23, 1960, of record in Deed Book 241, page 381.
- I. (EXCEPTION #21) Right of Way from Malcolm M. Brown and Lorena H. Brown to American Telephone and Telegraph Company, dated October 19, 1960, of record in Deed Book 242, page 430.
- J. (EXCEPTION #22) Right of Way Agreement from Jefferson Orchards, Incorporated to The Potomac Edison Company of West Virginia, dated May 29, 1973, of record in Deed Book 359, page 228.
- K. (EXCEPTION #23) Right of Way Agreement from Jefferson Orchards, Inc. to The Potomac Edison Company, dated July 15, 1979, of record in Deed Book 460, page 307.
- L. (EXCEPTION #24) Right of Way Agreement for Buried Plant from Jefferson Orchards, Inc. to General Telephone Company of the Southeast, dated October 18, 1977, of record in Deed Book 447, page 53.
- M. (EXCEPTION #25) Right of ways, easements, reservations and out-sales described in the Deed from Malcolm M. Brown and Lorena H. Brown, his wife, to Jefferson Orchards, Inc., dated December 1, 1966, of record in Deed Book 284, page 460.
- N. (EXCEPTION #26) Easement Agreement from Jefferson Orchards, Inc. to C/R TV Cable, Inc. dated November 1, 1984, of record in Deed Book 533, page 208.
- O. (EXCEPTION #27) Deed from Jefferson Orchards, Inc. to the West Virginia Department of Transportation, Division of Highways, dated September 9, 2004, of record in Deed Book 995, page 248, for proposed West Virginia Route 9.
- P. (EXCEPTION #28) Order regarding the Annexation of Additional Territory of the City of Ranson, annexing the Property, dated December 30, 2004, of record in Deed Book 1000, page 160.
- Q. (EXCEPTION #30) Unrecorded Pipeline Crossing Agreement between CSX Transportation, Inc. and Jefferson Orchards, Inc., dated April 25, 2005, for the transmission of potable water.
- R. (EXCEPTION #31) Unrecorded Pipeline Crossing Agreement between CSX Transportation, Inc. and Jefferson Orchards, Inc., dated April 25, 2005, for the transmission of raw/treated sewage.
7. THERE IS NO OBSERVED EVIDENCE OF WETLANDS OR OTHER SIGNIFICANT WATER FEATURES.
8. THE PROPERTY SHOWN HEREON HAS DIRECT ACCESS TO THE WV ROUTE 9 RIGHT OF WAY AND TO CHARLES TOWN ROAD, WV ROUTE 115 VIA A BRIDGE CROSSING OVER THE CSX TRANSPORTATION RAILROAD AND THE WV ROUTE 9 ROADWAY.
9. THERE IS NO OBSERVED EVIDENCE OF CEMETERIES.
10. AS OF THE DATE OF THIS SURVEY THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
11. THERE IS NO EVIDENCE OF SITE USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

LEGAL DESCRIPTION

DESCRIPTION OF  
A PORTION OF  
TRACT 1  
JEFFERSON ORCHARDS, INC.  
(PLAT BOOK 25, PAGE 649-652)  
RANSON CORPORATION  
JEFFERSON COUNTY, WEST VIRGINIA

BEING THE SOUTHERN PORTION OF TRACT 1 AS RECORDED IN PLAT BOOK 25 AT PAGE 649-652 SITUATED ON THE NORTH SIDE OF THE CSX TRANSPORTATION RAILROAD AND WEST VIRGINIA ROUTE 9 LOCATED IN RANSON CORPORATION AND BEING PART OF THE PROPERTY OF JEFFERSON ORCHARD, INC. AS ACQUIRED BY DEED DATED DECEMBER 1, 1966 AND RECORDED IN DEED BOOK 284 AT PAGE 460 AMONG THE LAND RECORDS OF JEFFERSON COUNTY, WEST VIRGINIA.

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N 24°10'38" E, 880.00 FEET

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TO THE POINT OF BEGINNING CONTAINING 5,942,851 SQUARE FEET OR 136.42909 ACRES OF LAND.

LEGAL DESCRIPTION OF TRACT 1

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TRACT 1  
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N 24°10'38" E, 880.00 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE SOUTHERLY LINE OF THE PROPERTY NOW OR FORMERLY OF CEMETERY TRUSTEES (DEED BOOK 98, PAGE 68) MARKING AN EASTERLY CORNER OF JEFFERSON ORCHARDS, INC. (DEED BOOK 1046, PAGE 284);

THENCE WITH SAID SOUTHEASTERLY LINE OF CEMETERY TRUSTEES;

S 65°27'27" E, 230.80 FEET

TO A 5/8" RE-BAR AND CAP SET;

THENCE WITH THE EASTERLY LINE OF SAID CEMETERY TRUSTEES AND CONTINUING WITH THE EASTERLY LINE OF SAID JEFFERSON ORCHARDS, INC.;

N 01°15'02" E, 525.64 FEET

TO 5/8" RE-BAR AND CAP SET MARKING THE NORTHEASTERLY CORNER OF SAID JEFFERSON ORCHARDS, INC. AND THE SOUTHEASTERLY CORNER OF THE PROPERTY NOW OR FORMERLY OF THOMAS HODGES (DEED BOOK 184, PAGE 16);

THENCE WITH THE EASTERLY LINES OF SAID THOMAS HODGES THE FOLLOWING SIX (6) COURSES;

N 02°34'31" E, 905.31 FEET TO A 5/8" RE-BAR AND CAP SET;

N 15° 27' 25"E, 518.26 FEET TO A FENCE POST FOUND;

N 29° 38' 28"E, 1,048.36 FEET TO A FENCE POINT FOUND;

N 28° 11' 38"E, 75.44 FEET TO A RE-BAR FOUND;

N 14 ° 43' 07"E, 359.56 FEET TO A FENCE POST FOUND AND

S 74° 12' 12"E, 95.27 FEET

TO FENCE POST FOUND ON THE SOUTHERLY LINE OF THE PROPERTY NOW OR FORMERLY OF TRUSTEES OF THE JANE SNYDER MILLER AND LIGE BENTON MILLER, JR. REVOCABLE TRUST (DEED BOOK 1098, PAGE 421);

THENCE WITH SAID SOUTHERLY, WESTERLY AND SOUTHERLY LINES OF SAID TRUSTEES OF THE JANE SNYDER MILLER AND LIGE BENTON MILLER, JR. REVOCABLE TRUST THE FOLLOWING FOUR (4) COURSES:

S 72° 30' 18"E, 1,430.06 FEET TO A FENCE POINT FOUND;

S 39° 00' 25"W, 955.43 FEET TO A FENCE POINT FOUND;

S 12°47'51" W 1,246.70 FEET TO A FENCE POST FOUND AND

S 82°59'47" E 396.54 FEET

TO A 5/8" RE-BAR AND CAP SET MARKING A WESTERLY CORNER OF JEFFERSON ORCHARDS, INC. (DEED BOOK 284, PAGE 460);

THENCE WITH THE WESTERLY LINE OF SAID JEFFERSON ORCHARDS, INC.;

S 00°01'03" W 2,606.35 FEET

TO A 5/8" RE-BAR AND CAP SET ON THE WESTERLY SIDE OF AN EXTENDED RIGHT OF WAY OF WEST VIRGINIA ROUTE 9;

THENCE WITH SAID WESTERLY SIDE OF AN EXTENDED RIGHT OF WAY OF WEST VIRGINIA ROUTE 9 THE FOLLOWING (3) COURSES:

S 28°18'18" W 62.69 FEET TO A RE-BAR FOUND;

S 36°33'55" W 375.25 FEET TO A RE-BAR FOUND AND

S 32°30'42" W 131.99 FEET

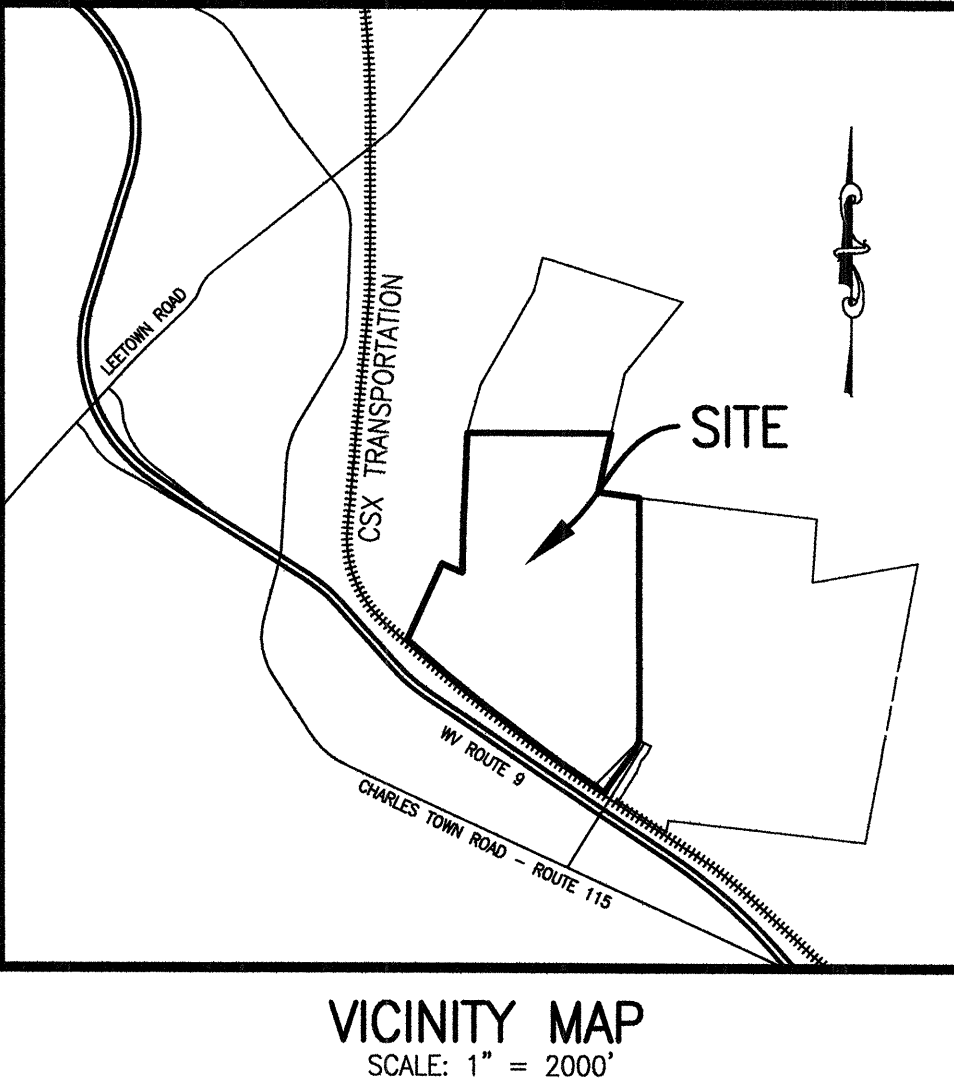
TO A RE-BAR FOUND ON THE NORTHERLY RIGHT OF WAY LINE OF AFOREMENTIONED CSX TRANSPORTATION RAILROAD MARKING THE POINT OF A NON-TANGENT CURVE TO THE RIGHT;

THENCE WITH SAID NORTHERLY RIGHT OF WAY LINE OF CSX TRANSPORTATION RAILROAD;

2,552.52 FEET ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 17,157.07 FEET AND A CHORD BEARING AND CHORD OF N 52°34'20" W, 2,550.16 FEET RESPECTIVELY, TO A 5/8" RE-BAR AND CAP SET MARKING THE POINT OF COMPOUND CURVATURE OF A CURVE TO THE RIGHT AND

37.20 FEET ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 2,831.79 FEET AND A CHORD BEARING AND CHORD OF N 47°56'05" W, 37.20 FEET RESPECTIVELY,

TO THE POINT OF BEGINNING CONTAINING 8,481,182 SQUARE FEET OR 194.70115 ACRES OF LAND.



VICINITY MAP  
SCALE: 1" = 2000'

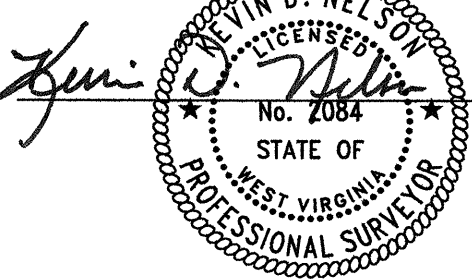
LEGEND

	LIGHT POLE
	AIR CONC. UNIT
	POWER POLE
	RE-BAR FOUND
	RE-BAR SET
	FENCE POST FOUND
	GRAVEL ROAD
	RAILROAD TRACKS
	OVER HEAD ELECTRIC
	BARBED WIRE FENCE
	CHAIN LINK FENCE
	EDGE OF CONCRETE
	CONCRETE STEPS
	ROOF OVERHANG

SURVEYORS CERTIFICATE

I HEREBY CERTIFY TO: ROYUL USA, INC.; FIRST AMERICAN TITLE INSURANCE COMPANY AND SPILMAN, THOMAS, AND BATTLE, PLLC.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 3, 4, 6(B), 8, 11(B), 13, 14, 16, 17, 18, 20, AND 21, OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON JUNE 9, 2017.



10.26.17  
DATE



4501 Daly Drive  
Chantilly, VA 20151  
Phone: 703-263-1900  
www.gordon.us.com

PROGRAMMING AND PLANNING  
CIVIL ENGINEERING  
LANDSCAPE ARCHITECTURE  
SURVEY AND MAPPING  
SECURITY CONSULTING

PLAT SHOWING  
ALTA/NSPS LAND TITLE SURVEY  
OF A PORTION OF  
TRACT 1  
JEFFERSON ORCHARDS, INC.  
PLAT BOOK 25, PAGE 649 - 652  
RANSON CORPORATION DISTRICT  
JEFFERSON COUNTY, WEST VIRGINIA

SCALE: 1" = 100'

DATE: JUNE 14, 2017

2014-0701

302A

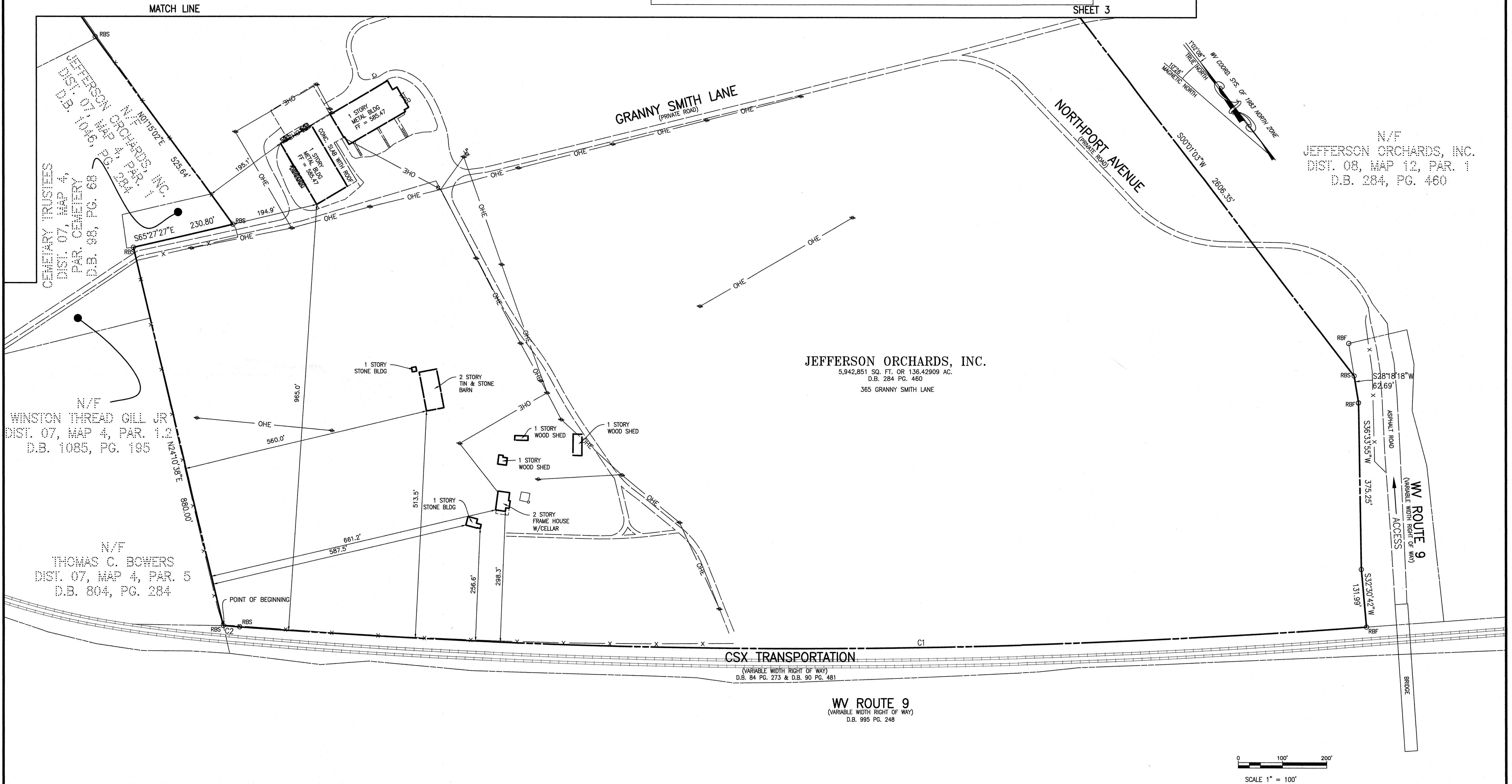
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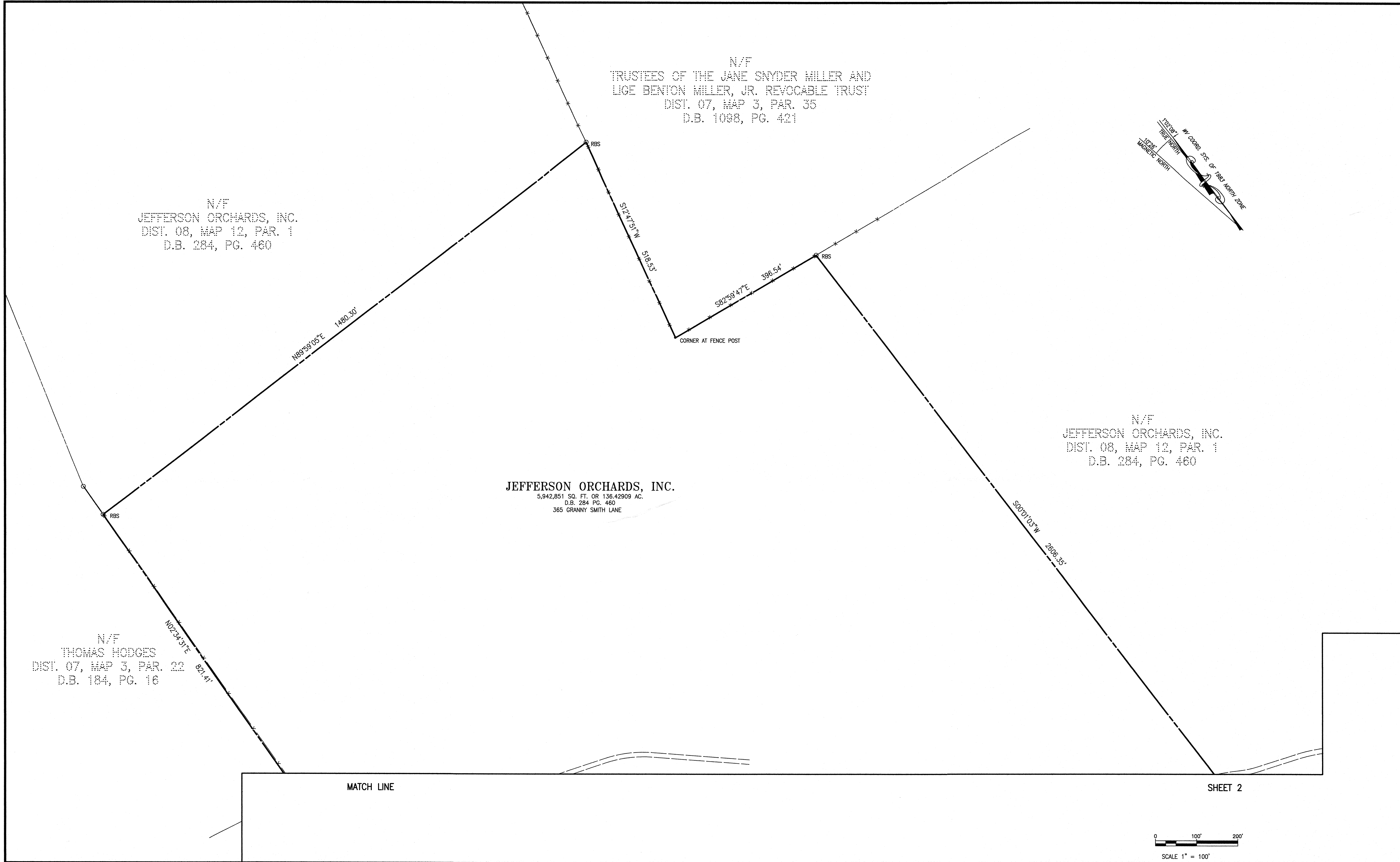
SHEET 1 OF 3



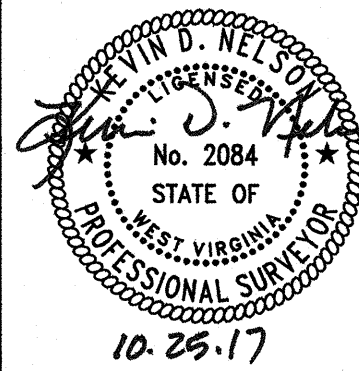
CURVE TABLE						
CURVE	ARC LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD BEARING
C1	2552.52'	17157.07'	8°31'27"	1278.62'	2550.16'	N52°34'20"W
C2	37.20'	2831.79'	0°45'10"	18.60'	37.20'	N47°56'05"W



No.	Revision	Date								
1	PER SPILLMAN LAW COMMENTS	10/06/17								



No.	Revision	Date
1	PER SPILLMAN LAW COMMENTS	10/06/17



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**JEFFERSON ORCHARDS, INC.**  
PLAT BOOK 25, PAGE 649 - 652  
RANSON CORPORATION DISTRICT  
JEFFERSON COUNTY, WEST VIRGINIA

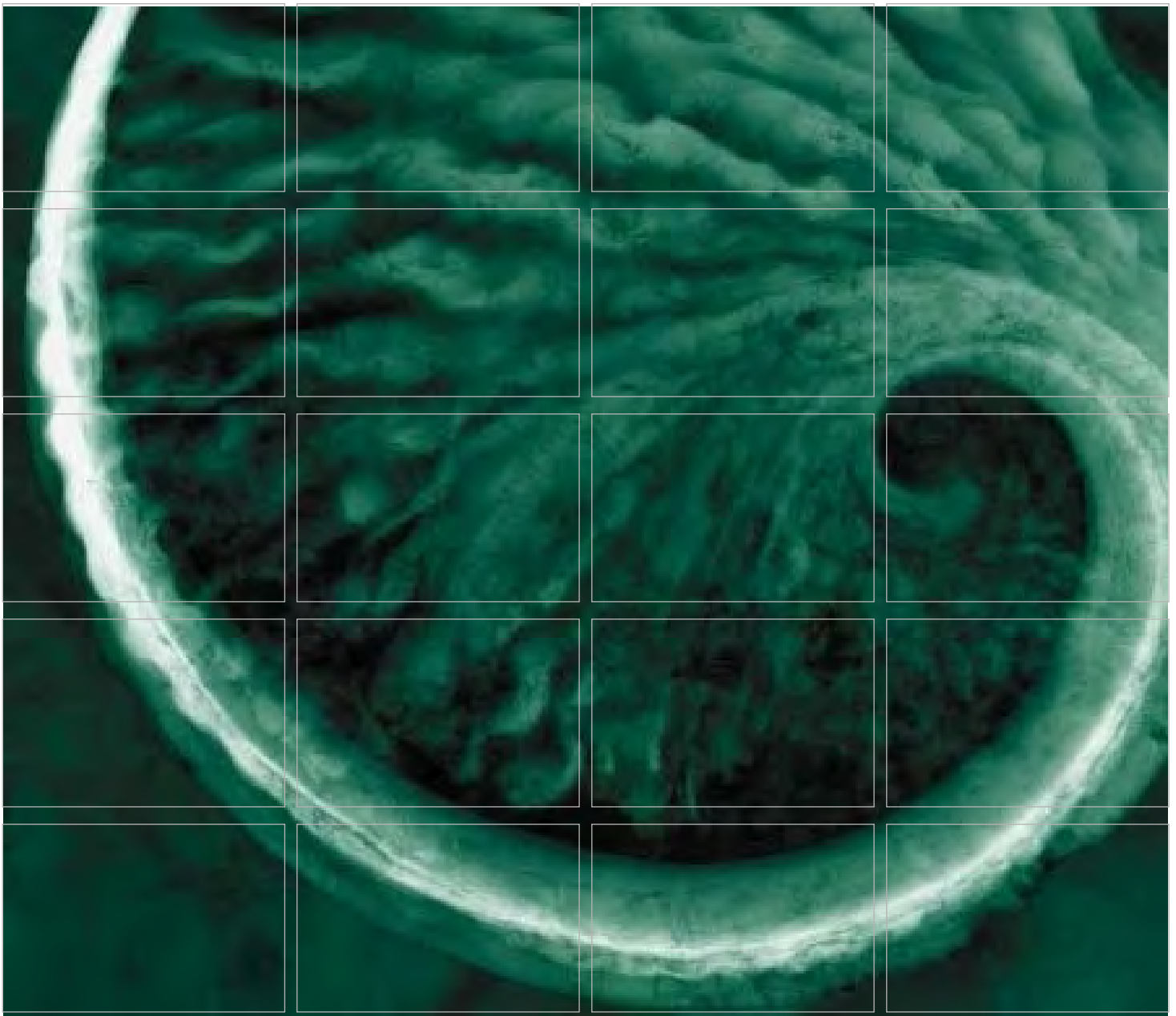
SCALE: 1" = 100'
DATE: JUNE 14, 2017
2014-0701
302A
DBC
2014-0701_AS01.DWG
SHEET 3 OF 3

## *Environmental Site Assessments*

1. Site Characterization Report - Non-VRP Parcel (ERM, January 2018)
2. Soil Excavation Report – Former Mixing Area (ERM, February 2018)

### Previous Site Assessments Submitted with Original VRP Application (included by reference only)

1. ERM Phase I Environmental Site Assessment (April 2017)
2. ERM Phase II Environmental Site Assessment (April 2017)
3. Parcel A Soil Management Plan (February 2005)
4. Parcel A Site Assessment Work Plan (February 2005)
5. Triad Phase II Environmental Site Assessment (July 2003)



## Project Shuttle

Prepared for:



### Site Characterization Report- Non VRP Parcel Jefferson Orchards Site

January 2018

204 Chase Drive  
Hurricane, WV 25526  
(304) 757-4777  
[www.erm.com](http://www.erm.com)



**Project Shuttle**  
Site Characterization Report–  
Non VRP Parcel  
Jefferson Orchards Site

January 2018

Project No. 0407978



---

David L. Carpenter, P.E.  
*Project Director*



---

David T. Connelly  
*Licensed Remediation Specialist*

**Environmental Resources Management**  
204 Chase Drive  
Hurricane, WV 25526  
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[www.erm.com](http://www.erm.com)



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## *LIST OF ACRONYMS*

AMSL	Above Mean Sea Level
BGS	Below Ground Surface
COPC	Chemicals of Potential Concern
DI	Deionized
EB	Equipment Rinse Blanks
ERM	Environmental Resources Management
ESA	Environmental Site Assessment
HASP	Health and Safety Plan
IDW	Investigation Derived Waste
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
QA/QC	Quality Assurance/Quality Control
RAWP	Remedial Action Work Plan
SAP	Sampling and Analysis Plan
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds
VRP	Voluntary Remediation Program
WVDEP	West Virginia Department of Environmental Protection

## ***EXECUTIVE SUMMARY***

ERM conducted site characterization activities at the former Jefferson Orchard property near Kearneysville, West Virginia, on August 16 - 18, 2017 and September 13-14, 2017 to investigate Constituents of Potential Concern (COPCs) in site media on a portion of the property known as the “non-VRP parcel” (“site”)

A total of 38 soil borings were advanced to various depths ranging from 1 to 25 feet below ground surface (bgs) for the collection of soil samples. Fifteen soil borings were advanced throughout the non-VRP area to depths of up to 25 bgs, for the collection of surface and subsurface soil samples. Twenty-three shallow soil borings were advanced to depths ranging from 0.5 to 2.5 feet bgs for the collection of soil samples, and sediment samples were collected from four locations within the former storm water collection pond. In addition, groundwater samples were collected from the two existing onsite water wells.

Soil, sediment, and groundwater samples were submitted to West Virginia certified laboratories for analysis. Laboratory analytical data indicated soil concentrations of dieldrin, and 4,4-DDT above their respective Industrial Soil De Minimis Standards, limited to a small area previously used as a pesticide mixing station. Groundwater analytical results indicated chloroform concentrations in both wells above the West Virginia Groundwater De Minimis Standard for chloroform.

Based on the limited area of impacted soil near the former mixing station, ERM recommends excavation and offsite disposal of this soil. Based on groundwater detections of chloroform in both existing wells, ERM recommends further investigation of groundwater at the site.

On behalf of Roxul USA Inc. (Roxul), Environmental Resources Management, Inc. (ERM) conducted this Site Characterization Investigation on the former Jefferson Orchards, Inc. property located at 365 Granny Smith Lane near Kearnyesville, West Virginia. A site location map is included as **Figure 1**. The original Jefferson Orchards property consisted of approximately 400 acres of land, previously used as a fruit orchard and agricultural land. On October 20, 2017, Roxul purchased approximately 194 acres of the western portion of the property, for the development and construction of an insulation manufacturing facility. The 194 acres purchased by Roxul is shown on **Figure 2** and has been tentatively subdivided into the following three areas:

1. VRP Parcel – Approximately 80 acres on the southeast portion of the property, currently participating in the Voluntary Remediation Program (VRP);
2. Non-VRP Parcel – Approximately 56 acres on the southwest portion of the property, not currently in the VRP; and,
3. Northern Area – Approximately 58 acres of stranded land, not currently planned for redevelopment.

The investigation was conducted on the 56-acre non-VRP parcel, hereinafter referred to as the “Site” (**Figure 3**).

This report summarizes the findings for the soil and groundwater investigation conducted by ERM in August and September 2017 at the Site.

## PURPOSE AND OBJECTIVES

ERM was retained by Roxul to conduct a site investigation of the Non-VRP Parcel portion of their property in Jefferson County, West Virginia. Data obtained from this investigation will be used to evaluate potential risk to human health and the environment. The goal of the site characterization activities was to investigate Constituents of Potential Concern (COPCs) in site media. Field activities were conducted on August 15 – 18, 2017 and September 13 – 14, 2017. Activities included the advancement of a total of thirty-eight soil borings for the collection of soil samples, and collection of three groundwater samples from existing onsite water wells.



## 1.2

### *SITE BACKGROUND INFORMATION*

The site consists of approximately 56 acres of land and is located in an area predominantly characterized by karst topography. The site is situated at an elevation of approximately 570 feet above mean sea level (amsl). Topography across the site consists of gentle to moderate slopes and elevations ranging from approximately 550 feet to 590 feet amsl. The Site is bound to the north by the Northern Area (currently vacant), to the east by the VRP Parcel where construction of the production facility is planned, to the west by wooded areas, a cemetery and a former quarry, and to the south by a CSXT railroad ROW and West Virginia Route 9.

A general site plan outlining the subject property with soil boring locations is provided as **Figure 2**.

## 1.3

### *PREVIOUS SITE CHARACTERIZATIONS*

A summary of environmental investigations conducted at the Site in 2017 is provided below.

- ERM conducted a Phase I Site Investigation on March 6 - 7, 2017. The investigation included a site reconnaissance field visit and supplemental research. Based on identified historical Site information, findings from the field visit, and desktop study, ERM recommended a Phase II Environmental Site Assessment (ESA) to further assess site soils and groundwater.
- ERM conducted a Phase II ESA March 15 - 17, 2017. The ESA activities included the advancement of four soil borings down to ten feet bgs for the collection of twenty soil samples and the collection of three grab groundwater samples from three existing potable wells (Packing Shed well and Residential well – both located on the Non-VRP Parcel, and the Labor Camp well – located further east on property owned by Jefferson Orchards, Inc.). Dieldrin was detected above its respective West Virginia Industrial De Minimis standard in one soil sample. Dieldrin was also detected in the Packing Shed well above its respective De Minimis Groundwater standard. Additionally, chloroform was detected above its respective Groundwater De Minimis standard in all three of the wells.

Although the Site is not currently in the VRP, Site characterization activities were conducted in accordance with the August 2017 Sampling and Analysis Work Plan (SAWP), approved by WVDEP.

**SOIL, SEDIMENT AND GROUNDWATER INVESTIGATION ACTIVITIES**

Soil sampling activities were conducted on August 15 – 18, 2017 and September 13 – 14, 2017. The primary objective of this site characterization was to further investigate COPCs and delineate COPC in soils.

**August 2017 Sampling**

A total of nineteen soil borings were advanced at the Site to various depths ranging from 1 to 25 feet below ground surface (bgs). Fourteen soil borings were advanced to depths up to 25 feet bgs for the collection of surface and subsurface soil samples. Five shallow soil borings were advanced as surface soil samples no greater than 2.5 feet bgs for the collection of surface and subsurface soil samples. Sediment samples were collected from one location (SED-1) within the former storm water collection pond. Soil borings were advanced by a West Virginia certified driller, A-Zone Environmental Services and by ERM using a stainless steel hand auger.

Additionally, ERM collected groundwater samples from both the Packing Shed well and the Residential well. Groundwater sampling activities were conducted on August 15, 2017. The primary objective of the sampling activities was to collect an additional round of samples from onsite wells. Samples were collected in accordance with operating procedures outlined in EPA Region 4 Potable Water Supply Sampling guidance document (EPA, 2013).

**September 2017 Sampling**

Based on analytical results from the August 2017 sampling activities additional delineation samples were collected in the vicinity of SB-28 and the former mixing area. Surface and/or subsurface soil samples were collected from twenty locations including:

- In order to delineate a lead detection in the sample collected from SB-28 (0-0.5'), eight soil borings were advanced to a depth of 1 foot

bgs in the vicinity of SB-28: SB-28N through SB-28S were collected at a ten foot offset from SB-28 to the north, east, west and south respectively and SB-28N2 through SB-28S2 were advanced at a twenty foot offset from SB-28 to the north, east, west and south respectively and;

- In order to delineate pesticide detections in the former mixing area, eleven mixing area delineation points: MA-DP-1 through MA-DP-6 and MA-DP-8 through MA-DP-12 were advanced, and SB-31 was further advanced to a depth of 5 feet bgs.

Sediment samples were collected from three additional locations in the storm water collection pond (SED-2 through SED-4) to further investigate potential impacts to sediments from runoff from the former fruit washing area.

No additional groundwater samples were collected during the September 2017 sampling activities.

## 2.2 *UNDERGROUND UTILITY CLEARANCE*

Prior to advancement of soil borings, ERM subcontracted Underground Services Inc., (SoftDig) to conduct an underground utility survey in the vicinity of each proposed boring location. SoftDig used both ground penetrating radar and electromagnetic methods to scan a twenty foot radius of each boring location. No evidence of underground utilities was identified in the vicinity of the boring locations.

## 2.3 *ANALYTICAL PROGRAM*

Soil sampling parameters for this investigation included priority pollutant pesticides, arsenic, and lead, and were based on COPCs listed in the August 2017 WVDEP approved SAP. Select locations were analyzed for additional parameters based on findings in ERM's March 2017 Phase II ESA, which are described as follows:

- Select intervals of SB-22 were analyzed for formaldehyde and inorganics based on the close proximity of a cemetery on the adjacent property;
- Select intervals of SB-29 were analyzed for total petroleum hydrocarbons (TPHs), polycyclic-aromatic hydrocarbons (PAHs), and benzene, toluene, ethylbenzene, and xylenes (BTEX) based on the presence of an aboveground fuel tank and former equipment fueling operations in the immediate vicinity , and;

- The sample collected from SB-35 was analyzed for polychlorinated biphenyls (PCBs) based on the close proximity of an overhead, pole-mounted transformer.

Groundwater samples collected from the Packing Shed well and the Residential well were analyzed for priority pollutant pesticides and VOCs, based on previous groundwater sampling results from ERM's March 2017 Phase II ESA.

## 2.4 *PROCEDURES AND METHODOLOGIES*

Procedures and methodologies associated with equipment decontamination, soil sample collection, groundwater sample collection, and waste handling are outlined in the following sections.

### 2.4.1 *Decontamination*

Decontamination of equipment was performed to remove residual chemical contamination before using the equipment to collect samples for environmental analysis. Sampling equipment was decontaminated using the following procedures:

1. Post-Sample Collection Cleanup – Residual visible soil was removed as much as possible by scraping and shaking.
2. Gross Wash and Water Rinse – The equipment was washed with laboratory-grade, phosphate-free detergent (Liquinox or Alconox) in water and rinsed with distilled water to remove visible particulates.
3. 10% Nitric Acid Rinse – Prior to collecting samples to be analyzed for metals, stainless steel and glass sampling equipment was rinsed with 10% nitric acid (HNO<sub>3</sub>) solution. The nitric acid solution was applied using a labeled laboratory-grade Nalgene® spray bottle.
4. Analyte-Free Water Rinse – Decontaminated equipment was rinsed with deionized (DI) certified analyte-free water supplied by Preiser Scientific, Inc. DI water was applied using a labeled laboratory-grade Nalgene® spray bottle.
5. Hexane Rinse – Prior to collecting samples to be analyzed for polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCBs), stainless steel sampling equipment was rinsed with a hexane solution. The hexane solution was applied using a labeled

laboratory-grade Nalgene® spray bottle.

6. Analyte-Free Water Rinse – Decontaminated equipment was rinsed with DI certified analyte-free water supplied by Preiser Scientific, Inc. DI water was applied using a labeled laboratory-grade Nalgene® spray bottle.
7. Solvent Rinse – Prior to collecting samples to be analyzed for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), sample equipment was rinsed with reagent grade isopropanol. Isopropanol was applied using a labeled laboratory-grade Nalgene® spray bottle.
8. Second Analyte-Free Rinse – Decontaminated equipment was rinsed with DI, and applied using a labeled laboratory-grade Nalgene® spray bottle.
9. Protective Wrap – Decontaminated equipment was allowed to air dry and stored in a designated storage location, free from sources of contamination.

## 2.4.2 *Soil Sample Collection*

### **August 2017 Sampling**

During the August 2017 site characterization activities, surface and subsurface soil samples were collected from sixteen locations including SB-17 through SB-35. A total of three duplicate samples were collected including DUP-1 through DUP-3. August 2017 soil boring locations are illustrated on **Figure 3**.

Surface and subsurface soil samples were collected from soil borings using either a track-mounted 7822DT Geoprobe®, employing direct-push techniques, or a stainless steel hand auger. The Geoprobe® unit was positioned at each soil boring location and the drive unit was hydraulically raised on its base so the weight of the vehicle and a hydraulically powered percussion hammer pushed the probe with an attached five foot long 2 1/8-inch outside diameter outer core barrel into the ground. Direct-push soil samples were collected using a specially designed stainless steel sample tube or core barrel with an inner polyvinyl chloride (PVC) macro-core sleeve. Following the retrieval of the PVC sleeve, each soil sample was removed from the core barrel and the sleeve split open using a decontaminated knife equipped with a stainless steel

blade. A stainless steel hand auger was used to advance select borings terminating at a total depth of five feet bgs.

### **September 2017 Sampling**

During the September 2017 site characterization activities, surface and subsurface soil samples were collected from twenty locations including: SB-28N through SB-28S2, SB-31, MA-DP-1 through MA-DP-6, and MA-DP-8 through MA-DP-12. September 2017 soil boring locations are illustrated on **Figures 3 and 6**.

Based on shallow target depths for delineation of pesticides in soil, surface and subsurface soil samples were collected in six-inch intervals from soil borings using a stainless steel hand auger.

Soil samples during both the August and September sampling events were collected in six-inch intervals and placed into disposable polyethylene bags for homogenization and field screening. ERM screened each interval using a MiniRAE 3000 Photoionization Detector (PID). The tip of the PID probe was placed above freshly disturbed soil within the core or into the sample bag and the reading was recorded on the boring logs. The PID was calibrated daily prior to use and a calibration log is included in **Appendix A**. Soils were logged and classified according to the Unified Soils Classification system in accordance with ASTM Method D 2488 90. Soil sample descriptions, sample depth intervals, PID readings, and sample identification names were recorded on boring logs, included as **Appendix B**.

Samples collected for chemical analysis were placed in appropriate sample containers with required preservatives, labeled for proper identification, packed in a cooler with ice, and submitted to West Virginia certified laboratory.

#### **2.4.3      *Sediment Sample Collection***

Sediment samples were collected from sediment sampling locations using a stainless steel hand auger. Sediment was collected in six-inch intervals and placed directly into disposable sample bags for homogenization and field screening.

Samples collected for chemical analysis were placed in appropriate sample containers with required preservatives, labeled for proper identification, packed in a cooler with ice, and submitted to West Virginia certified laboratory, ALS Environmental.



#### 2.4.4 *Groundwater Sample Collection*

To further characterize groundwater at the site, ERM collected samples from the two existing groundwater wells referred to as the Packing Shed well and the Residential well, in August 2017. A duplicate sample was also collected from the Packing Shed well.

Groundwater samples were collected in accordance with USEPA Standard Operating Procedure for Potable Water Supply Sampling (May, 2013), using existing pumps and piping associated with the wells. After approximately fifteen minutes of purging, ERM collected groundwater samples directly from well spigots into laboratory supplied bottle-ware. The water samples were collected prior of water softeners or other water treatment devices, in an effort to collect samples representative of site groundwater conditions. Water quality measurements including temperature, pH, and conductivity were collected during the well purging using a YSI 63 water quality meter. The groundwater well locations are illustrated on **Figure 3** and groundwater sample collection logs are included in **Appendix C**.

#### 2.4.5 *Investigation-Derived Waste (IDW)*

Upon collection of soil samples, remaining soil cuttings were collected in a properly labeled, 55-gallon drum and stored onsite near the Packing Shed. The container was labeled with the date filled and source of the waste. Upon characterization, the drum will be scheduled for pick up and disposal by a qualified waste disposal vendor.

### 2.5 *LABORATORY METHODOLOGIES*

Samples collected as part of this investigation were submitted to a West Virginia certified laboratory (ALS Environmental in Middletown, Pennsylvania, ALS Environmental in South Charleston, West Virginia, or REIC Consultants in Beaver, West Virginia). Samples were analyzed in accordance with USEPA approved procedures such as those set forth by SW-846, Methods of Chemical Analysis for Water and Wastes (USEPA 600/4 79 010) 3rd edition, update 1 (November, 1990). ALS meets Occupational Safety and Health Administration (OSHA) requirements, and has a Quality Assurance Program consistent with USEPA guidance document "Guidance for Data Quality Assessment: Practical Methods for Data Analysis EPA/600/R-96/084, July 2000."

Soil analytical results were compared to the West Virginia Industrial Soil De Minimis Standards (June 2017). Groundwater analytical results were compared to the West Virginia Groundwater De Minimis Standards (June 2017).

**SITE GEOLOGY**

According to the United States Department of Agriculture Natural Resources Conservation Service web soil survey data, the Site geology is characterized by Hagerstown silt loam/silt clay and Vertrees silt loam/silt clay deposits. The silt loams and clays are underlain by Stonehenge Limestone bedrock, which is underlain by Conococheague Formation. The Hagerstown silt loam/silt clay and Vertrees silt loam/silt clay deposits are characterized as prime areas for farmland and are well drained soils. These sequences average 0 to 7 feet in thickness and were deposited on top of the Stonehenge Limestone bedrock unit. The Stonehenge Limestone bedrock is characterized as gray, thin-bedded to massive, fossiliferous limestone, largely mechanically deposited, with small black chert nodules and beds of “edgewise” conglomerate (Cardwell, et al., 1986).

Depth to bedrock beneath the Site varies due to the nature of limestone karst topography and may range from 5 to 35 feet bgs. The bedrock underlying the Hagerstown silt loam/ silt clay and Vertrees silt loam/silt clay deposits is part of the Conococheague Formation of the Cambrian-System. The Conococheague Formation is predominately algal and mechanically deposited limestone, with interbeds of aphanitic limestone and dolomite. The Formation contains siliceous and dolomitic laminations (Cardwell, et al., 1986).

**SOIL ANALYTICAL RESULTS**

Soil analytical results were compared to the West Virginia Industrial Soil De Minimis Standards. Soil data is tabulated and included in **Tables 1A – 1D**. Laboratory analytical reports are included as **Appendix D**. Soil results above Industrial Soil De Minimis standards are illustrated on **Figure 4**.

### 3.2.1 *Inorganics (Metals)*

Total lead was detected above the Industrial Soil De Minimis Standard of 1000 mg/kg in SB-28 (0-0.5') at a concentration of 2,250 mg/kg during the August 2017 sampling event. No other total lead concentrations were detected above the Industrial Soil De Minimis Standard during the August 2017 soil sampling activities.

ERM collected additional soil samples in the immediate vicinity of SB-28 during the September 2017 sampling activities, in an effort to horizontally and vertically delineate the lead concentration detected in SB-28 (0-0.5'). No concentrations of total lead were detected above the Industrial Soil De Minimis Standard in the additional soil samples collected during the September 2017 soil sampling activities.

ERM requested a toxicity leaching characteristic procedure (TCLP) analysis for lead on SB-28 (0-0.5'), for waste characterization purposes. Analytical results indicated a TCLP lead concentration of 0.016 mg/L, which is below the lead toxicity threshold of 5 mg/L. Based on TCLP lead results below the toxicity threshold, ERM requested ALS to analyze three additional aliquots of the remaining volume of SB-28 (0-0.5') for total lead. Lead concentrations for these three analyses were: 57.8 mg/kg for SB-28 (0-0.5')<sup>R1</sup>, 32.4 mg/kg for SB-28 (0-0.5')<sup>R2</sup>, and 28.8 mg/kg for SB-28 (0-0.5')<sup>R3</sup>, which are below the Industrial De Minimis Standard for lead.

### 3.2.2 *Pesticides*

4,4-DDT was detected above the West Virginia Industrial Soil De Minimis Standard of 150 mg/kg in SB-31(0.5-1.0) and SB-32 (0-0.5) at respective concentrations of 209 mg/kg and 560 mg/kg during the August 2017 soil sampling activities.

Additionally, dieldrin was also detected above the West Virginia Industrial Soil De Minimis Standard of 3.8 mg/kg in SB-31 (0-0.5), SB-31(0.5-1.0), and SB-32 (0-0.5) at respective concentrations of 18.8 mg/kg, 11.3 mg/kg, 13.2 mg/kg, and 9.13 mg/kg.

No other pesticides were detected above their respective West Virginia Industrial Soil De Minimis Standards in samples collected during the August 2017 soil sampling activities.

In September 2017, ERM collected additional samples in the vicinity of SB-31 and SB-32 to further delineate pesticides in soil. No pesticides were detected above their respective West Virginia Industrial Soil De Minimis

Standards in samples collected from the Site during the September 2017 soil sampling activities.

### **3.2.3**      *VOCs*

VOCs were not detected above their respective West Virginia Industrial Soil De Minimis Standards in samples collected from the Site during the August 2017 soil sampling activities.

### **3.2.4**      *TPH*

Select intervals of SB-29 were analyzed for TPH based on the presence of an above ground fuel tank and former fueling operations in the immediate vicinity. TPHs were not detected above their respective laboratory reporting limits in samples collected from the Site during the August 2017 sampling activities. There are currently no established West Virginia Industrial Soil De Minimis Standards for TPH.

### **3.2.5**      *PAH*

Select intervals of SB-29 were analyzed for PAH based on the presence of an above ground fuel tank and former fueling operations in the immediate vicinity. PAHs were not detected above their respective West Virginia Industrial Soil De Minimis Standards in samples collected from the Site during the August 2017 sampling activities.

### **3.2.6**      *PCBs*

PCBs were not detected above their respective West Virginia Industrial Soil De Minimis Standards in the S-35 soil sample collected from beneath the pole-mounted transformer during the August 2017 soil sampling activities.

### **3.2.7**      *Formaldehyde*

Formaldehyde was not detected above its respective West Virginia Industrial Soil De Minimis Standard in samples collected from the Site during the August 2017 sampling activities.

### 3.3 *SEDIMENT ANALYTICAL RESULTS*

Sediment analytical results were compared to the West Virginia Industrial Soil De Minimis Standards. Sediment data is tabulated and included in **Tables 1A – 1B**. Laboratory analytical reports are included as **Appendix D**.

#### 3.3.1 *Inorganics (Lead and Arsenic)*

Inorganics were not detected above their respective West Virginia Industrial Soil De Minimis Standards in the samples collected from the Site during the August and September 2017 sediment sampling activities.

#### 3.3.2 *Pesticides*

Pesticides were not detected above their respective West Virginia Industrial Soil De Minimis Standards in the sediment samples collected from the Site during the August and September 2017 sediment sampling activities.

### 3.4 *GROUNDWATER ANALYTICAL RESULTS*

Groundwater analytical results were compared to the West Virginia Groundwater De Minimis Standards. Groundwater data is tabulated and included in **Tables 2A – 2B**. Laboratory analytical reports are included as **Appendix D**. Groundwater concentrations above De Minimis Standards are illustrated on **Figure 5**.

#### 3.4.1 *VOCs*

Chloroform was detected above the West Virginia Groundwater De Minimis Standard of 0.22 ug/L in groundwater samples collected from the Packing Shed Well and the Residential Well at respective concentrations of 0.66 ug/L, and 0.38 ug/L.

No other VOCs were detected above their respective West Virginia Groundwater De Minimis Standards in samples collected from the Site during the August 2017 groundwater sampling activities.

### 3.4.2 *Pesticides*

Pesticides were not detected above their respective West Virginia Groundwater De Minimis Standards in the sample collected from the Site during the August 2017 groundwater sampling activities.

### 3.5 *DATA VALIDATION*

Level IV data validation will be performed in accordance with the US EPA Region III Modifications to National Functional Guidelines (Organics – 9/94, and Inorganics – 4/93), as applied to SW-846 methodology for at least 10 percent of the soil samples collected during the 2017 site characterization activities. Data validation reports will be included as part of the Baseline/Residual Ecological and Human Health Risk Assessment.

### 3.6 *QA/QC ANALYTICAL RESULTS*

The precision and accuracy of the field sampling procedures were checked through the preparation, collection, submission and analysis of duplicate samples and equipment rinse blank samples. The following Quality Assurance/Quality Control (QA/QC) samples were collected and submitted for laboratory analysis:

<u>Sample Type</u>	<u>Quantity</u>
Duplicate Samples	3
Trip Blanks	2
Equipment Rinse Blanks	2

Three duplicate samples (DUP-2 (soil), DUP-3 (soil), and DUP-1 (groundwater)) were used as quality assurance of sample analysis methods. The duplicate samples were prepared by dividing a single sample into two equal aliquots for separate analyses. The duplicate samples were analyzed for the same parameters as the corresponding regular sample. Duplicate sample analytical results were within typical analytical precision expectations. Laboratory analytical results for the field duplicate samples collected during the August and September, 2017 sampling activities are included in **Tables 1A - 2B**.

Trip blank samples consisted of a set of two sample containers filled with analytical-free water obtained from the analytical laboratory. Blank water



was comprised of the same water used by the lab for method blanks. Trip blanks were submitted at a frequency of one (1) per sample shipment containing samples to be analyzed for VOCs. Trip blanks were analyzed for the same VOCs as media samples included in each particular shipment. A total of two (2) trip blank samples were submitted to the analytical laboratory and VOCs were not detected. Analytical results of the trip blank samples indicate that the sample packaging and shipping methods were effective and appropriate to prevent cross-contamination between sample containers.

Two equipment rinse blanks (ER-1 and ER-2) were collected using analyte-free DI water. Once the sampling equipment was fully decontaminated, the analyte-free water was poured over, across, and through the sample collection surfaces and the water was collected directly into appropriate water matrix sample containers. The rinse blanks were analyzed for the same parameters as those analyzed in matrix samples included in each particular shipment. The pesticide dieldrin was detected above the West Virginia Groundwater De Minimis Standard of 0.00072 ug/L in ER-1 at a concentration of 0.011 ug/L. This equipment rinse sample was collected after sampling soil in the former pesticide mixing area where dieldrin was previously detected in the soil. All other analytical results of the equipment rinse blank samples indicate the equipment decontamination procedures were effective in eliminating potential cross-contamination between sample locations. Laboratory analytical results for the rinse blank samples are included in **Table 3**.

Laboratory analytical results for the three duplicate samples and three equipment rinse samples are included in **Appendix D**.

ERM was retained by Roxul to conduct a Site Characterization Investigation within the Jefferson Orchards property in Kearneysville, West Virginia.

### SUMMARY OF ACTIVITIES

The goal of this investigation was to investigate potential COPCs in site media. The characterization activities included the following:

- Update of the site-specific Health & Safety Plan;
- Advancement of 38 soil borings for collection of surface and subsurface soil samples;
- Collection of sediment samples from four locations within the settling pond, and;
- Collection of groundwater samples from onsite wells.

Pesticide concentrations were detected above West Virginia Industrial Soil De Minimis Standards in the vicinity of the former mixing area. Based on analytical results of the September 2017 sampling activities, pesticide-impacted soil appears to be limited to an approximately 1,200 square foot area, extending approximately two feet deep in the vicinity of SB-31 and SB-32 (see **Figure 6**).

The lead concentration of 2,250 mg/kg detected in SB-28(0-0.5') was considered to be anomalous based on analysis of three additional aliquots of this sample for total lead, which yielded results well below the Industrial Soil De Minimis Standard. Additionally, lead was not detected above the De Minimis Standard in SB-28 (0.5-1'), collected immediately below this sample interval.

No other soil concentrations were detected above Industrial Soil De Minimis Standards.

Chloroform was detected above the West Virginia Groundwater De Minimis Standard for chloroform of 0.22 ug/L in both of the samples collected on-site. No other constituents were detected in groundwater above Groundwater De Minimis Standards.

A non-hazardous waste profile was developed for impacted soil in the former pesticide mixing area. The soil waste profile was approved by the WVDEP and Waste Management on November 15, 2017 and allows for the disposal of up to 600 tons of soil at the LCS Services Landfill in Hedgesville, WV. Roxul plans to excavate and dispose of soils from the former mixing area (see **Figure 6**). Confirmatory samples will be collected to ensure soils with pesticide concentrations above Industrial Soil De Minimis Standards have been removed from the site. This work will be conducted under LRS oversight.

Additionally, ERM recommends development of SAWP to further characterize groundwater at the site. Once the site has been adequately characterized, ERM will prepare a Baseline/Residual Human Health and Ecological Risk Assessment for the site.

American Society for Testing and Materials (ASTM), 1990, Designation D-2488-90, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

Cardwell, D. H., R, Erwin, R. B., Woodward, H. P., and Lotz, C. W., 1968, 1968 Geologic Map of West Virginia: West Virginia Geological and Economic Survey.

ERM, April 2017, Project Shuttle Phase I Environmental Site Assessment.

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ERM, July 2017, Sampling & Analysis Plan, Jefferson Orchards, Inc.

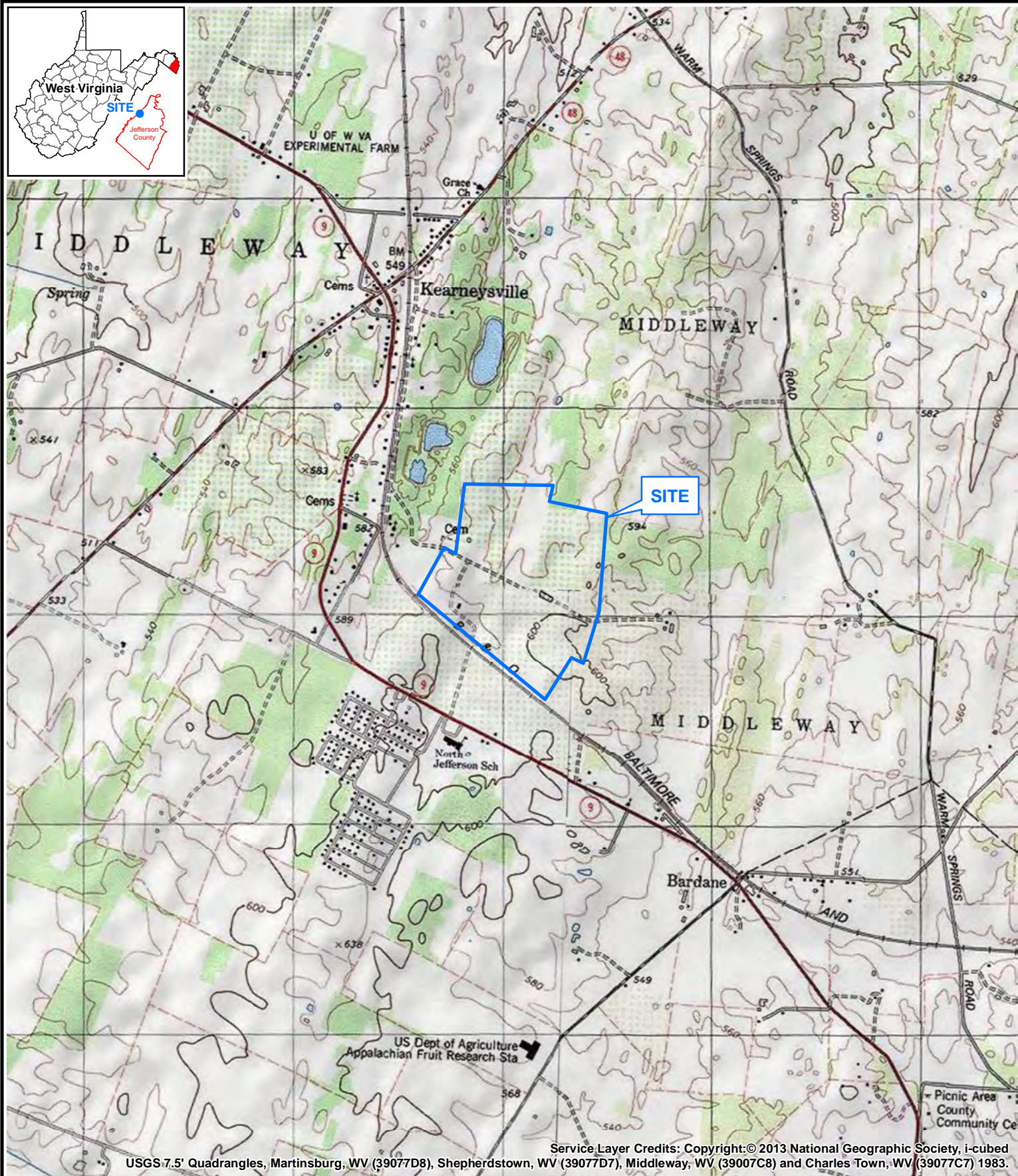
Ivahnenko, Tamar, and Zogorski, J.S., 2006, Sources and occurrence of chloroform and other trihalomethanes in drinking-water supply wells in the United States, 1986-2001: U.S. Geological Survey Scientific Investigations Report 2006-5015, 13 p.

WVDEP, 2002, West Virginia Voluntary Remediation and Redevelopment Act Guidance Manual, Version 2.1, Office of Environmental Remediation.

WVDEP, 2002, West Virginia Voluntary Remediation and Redevelopment Act Rule, Title 60, Series 3, Office of the Secretary.

## *Figures*





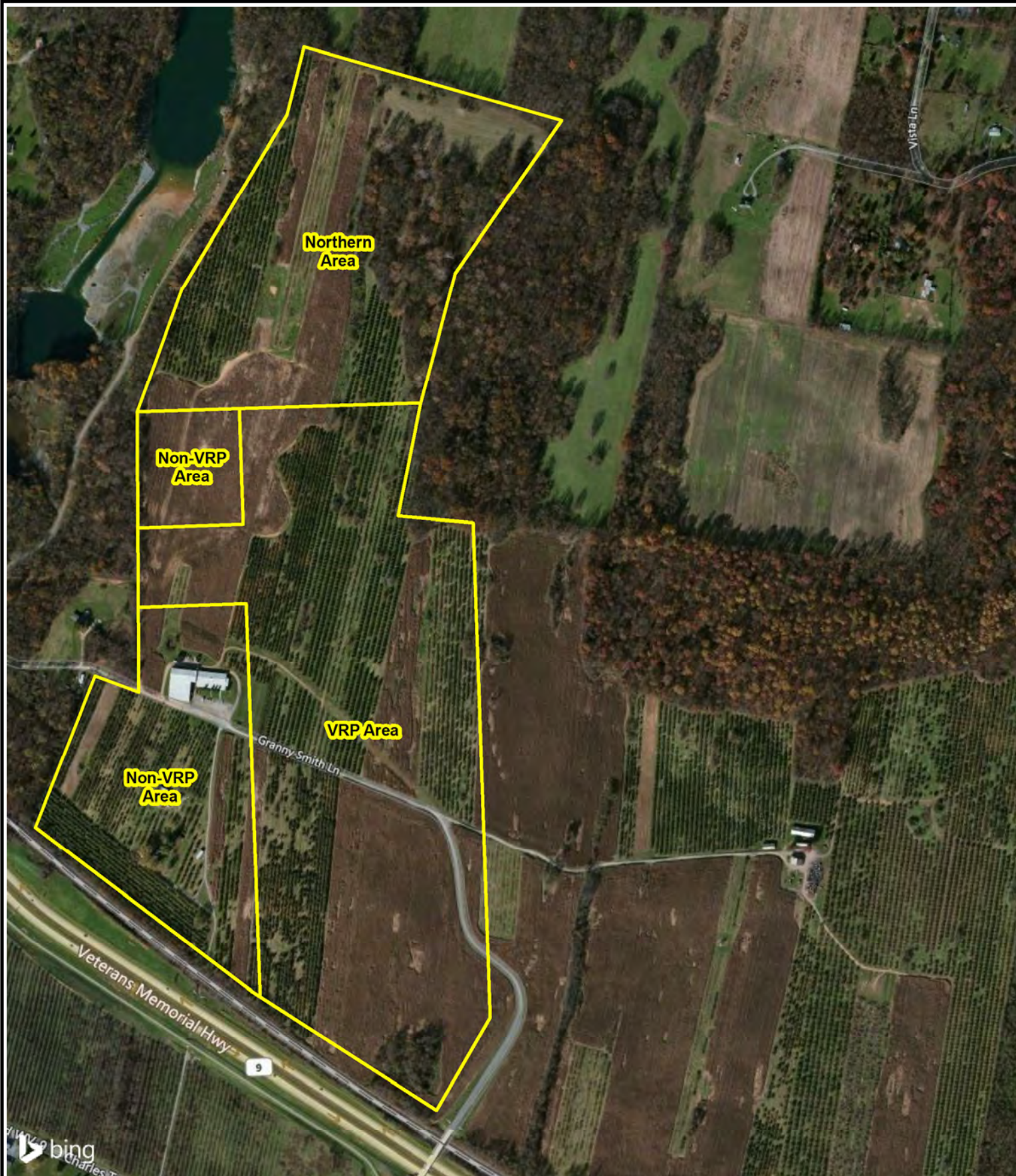
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**Figure 1**  
**Site Location Map**  
Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia





0 400 Feet

**Legend**

Roxul Project Boundary



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**Figure 2  
Site Plan**

Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia





#### Legend

- Deep Soil Boring (25 ft.)
- Shallow Soil Boring (5 ft.)
- Surface Soil Sample (1 ft.)
- Surface Water/Sediment Sample

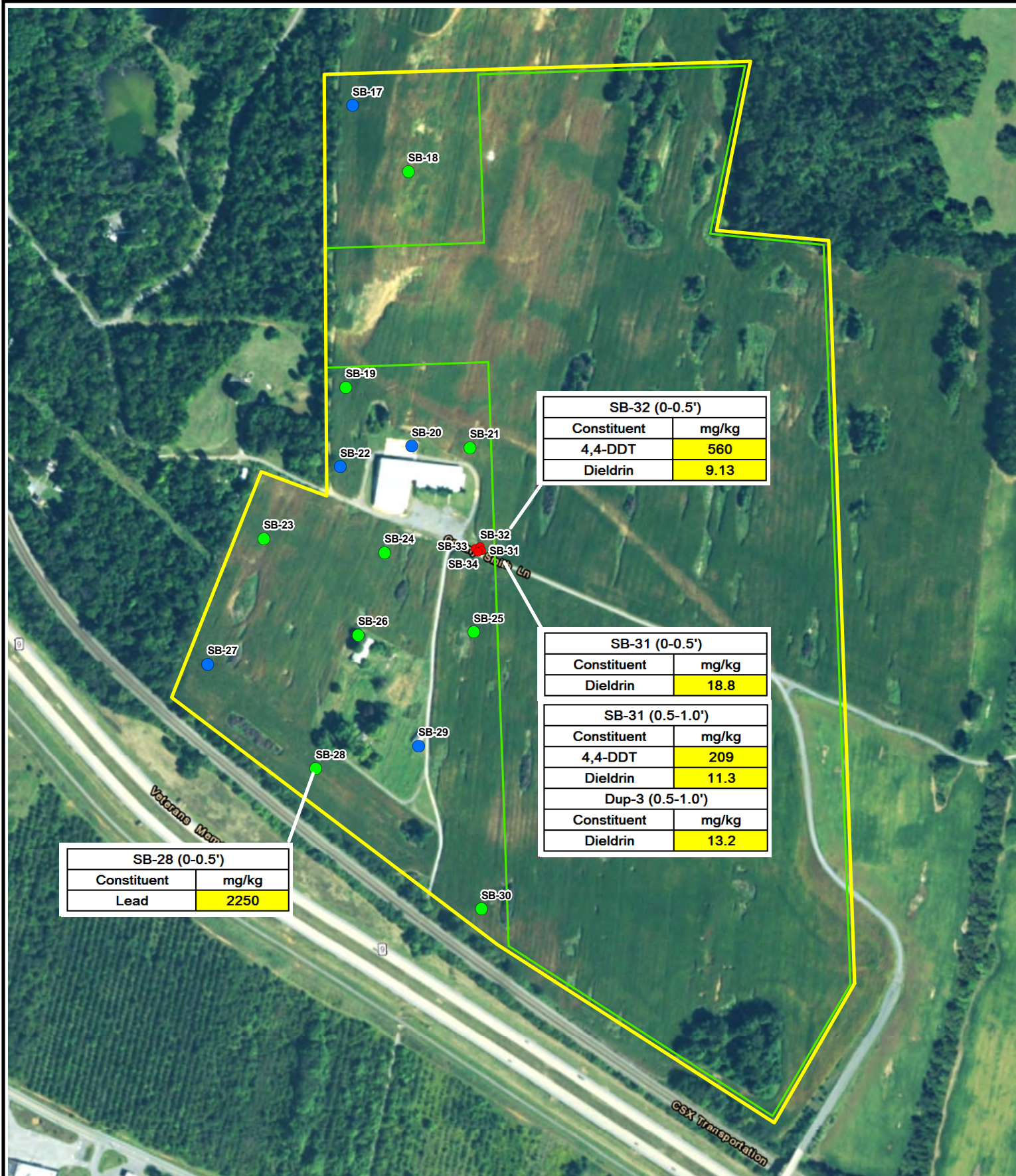
- ▭ Project Boundary
- ▭ VRP Site Boundary

**Figure 3**  
**Site Plan - Non VRP**  
 Jefferson Orchard Site  
 Project Shuttle  
 Kearneysville, West Virginia



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**Figure 4**  
**Soil Analytical Results**  
**Above West Virginia**  
**Industrial Soil De**  
**Minimis Standards**  
 Jefferson Orchard Site  
 Project Shuttle  
 Kearneysville, West Virginia

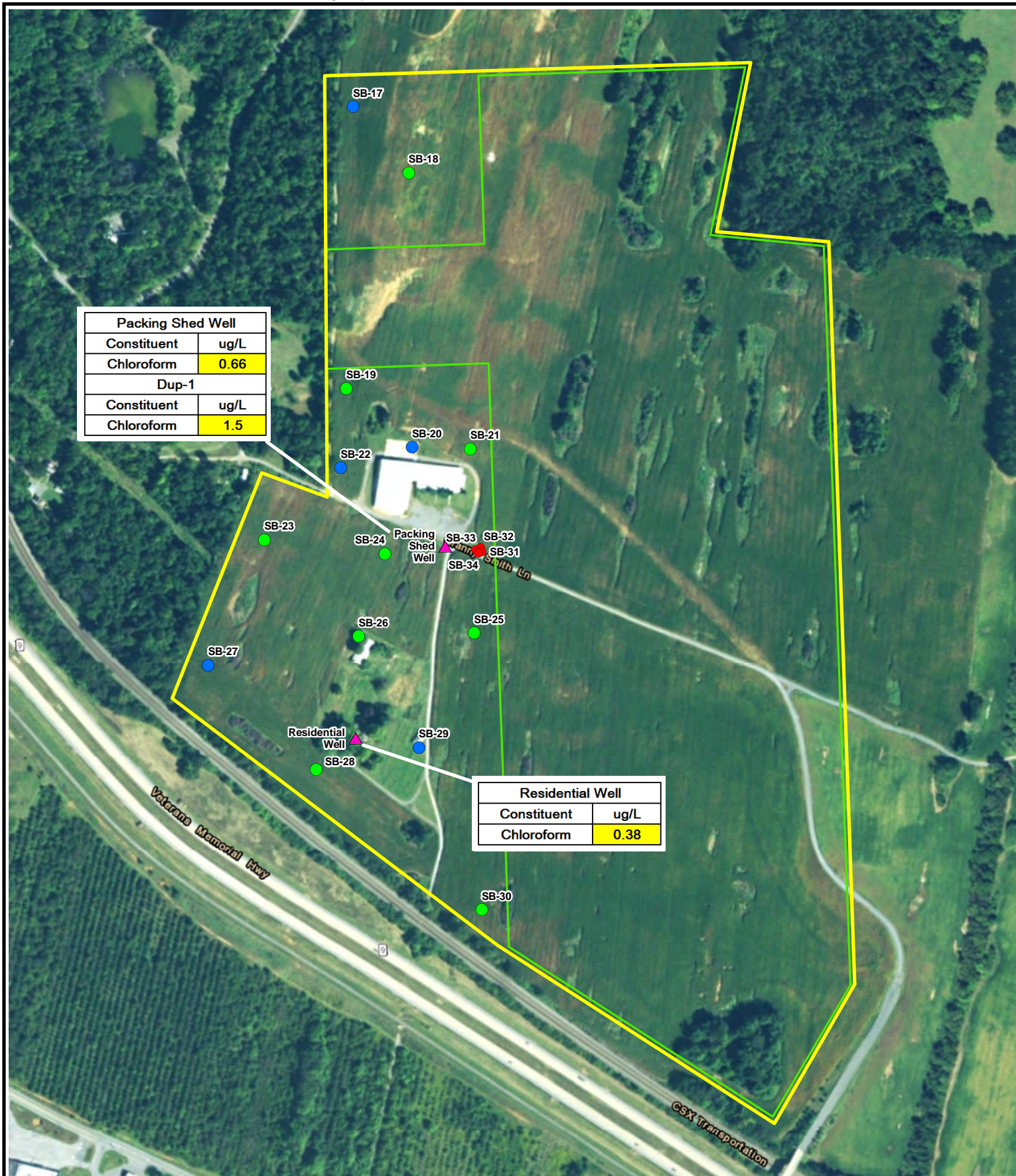


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**Legend**

- ▲ Water Well
- Deep Soil Boring (25 ft.)
- Shallow Soil Boring (5 ft.)
- Surface Soil Sample (1 ft.)

- Project Boundary
- VRP Site Boundary

**West Virginia Groundwater De Minimis Standards**

Constituent	ug/L
Chloroform	<b>0.22</b>

Values **bolded and highlighted yellow** indicate concentrations above WV Groundwater De Minimis Standards

**Figure 5**  
**Groundwater Analytical**  
**Results Above West**  
**Virginia Groundwater**  
**De Minimis Standards**

Jefferson Orchard Site  
 Project Shuttle  
 Kearneysville, West Virginia

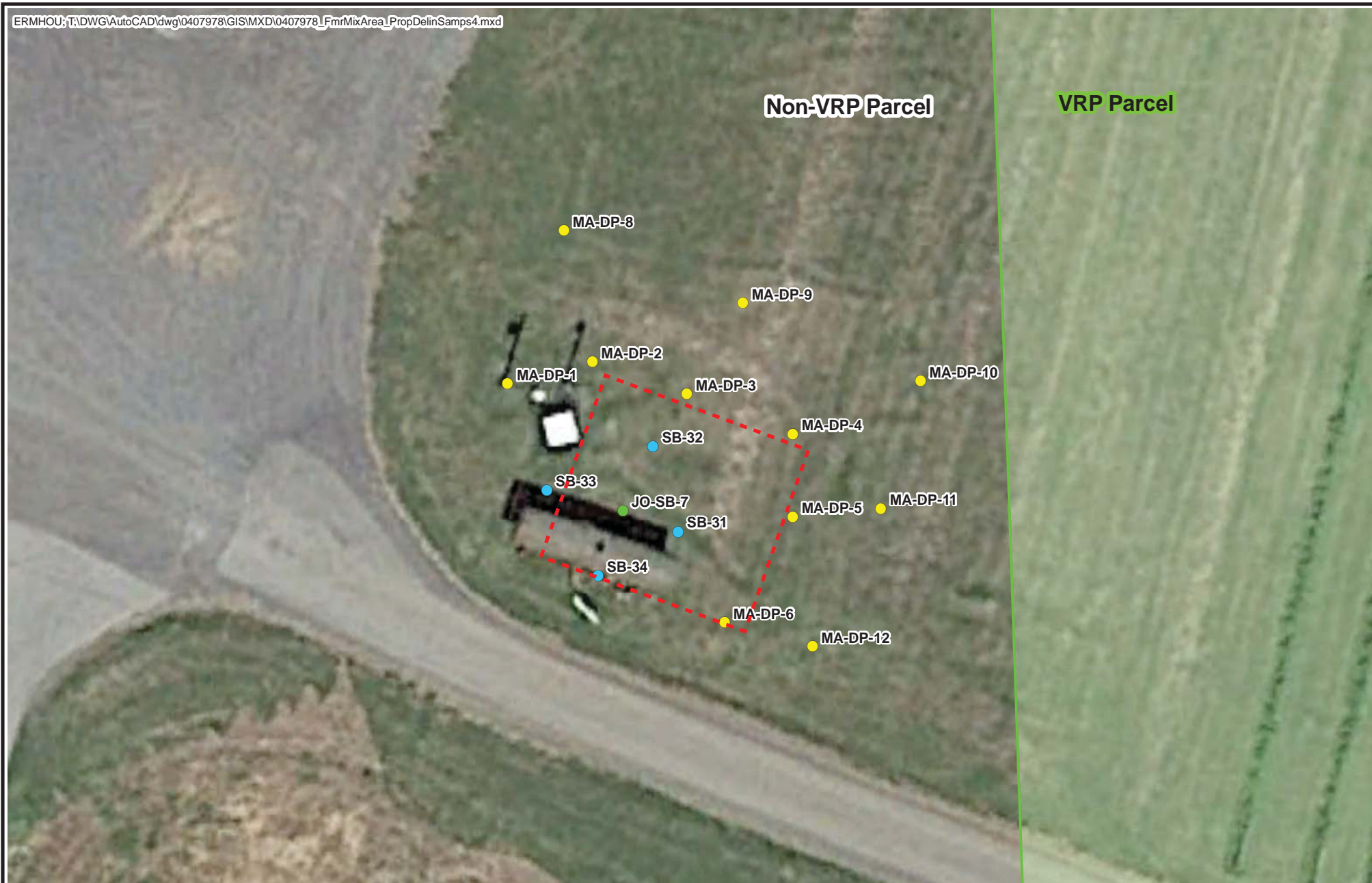


0 400 Feet



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0 20 Feet

**Legend**

- Original Sample Location from March 2017 Phase II ESA
- Sample Location from August 2017 Sampling
- MA-DP-# - Mixing Area Delineation Point

VRP Site Boundary

Approximate Area of Proposed Excavation



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**Figure 6**  
**Additional Delineation Sampling**  
**Former Mixing Area**  
Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia

## *Tables*

**TABLE 1A - Soil Analytical Results - Arsenic and Lead**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Constituent			Inorganics	
			Arsenic	Lead
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	35	1000
SB-17 (0-0.5')	8/17/2017		7.7	16.9
SB-17 (1.5-2.0')	8/17/2017		8.4	13
SB-17 (19.5-20.0')	8/17/2017		7.0	16.9
SB-18 (0-0.5')	8/17/2017		9.1	20.5
SB-18 (1.5-2.0')	8/17/2017		16.8	22.9
SB-18 (4.5-5.0')	8/17/2017		12.8	27.2
SB-19 (0-0.5')	8/17/2017		6.3	18.1
SB-19 (1.5-2.0')	8/17/2017		7.5	13.6
SB-19 (4.5-5.0')	8/17/2017		8.3	16.2
SB-20 (0-0.5')	8/18/2017		9.9	26.7
SB-20 (1.5-2.0')	8/18/2017		8.7	25.1
SB-20 (4.5-5.0')	8/18/2017		14.8	32.9
SB-21 (0-0.5')	8/17/2017		7.3	11.9
SB-21 (1.5-2.0')	8/17/2017		8.7	16.7
SB-21 (4.5-5.0')	8/17/2017		7.5	13.0
SB-22 (0-0.5')	8/18/2017		7.2	26.5
SB-22 (1.5-2.0')	8/18/2017		8.7	19.9
SB-22 (4.5-5.0')	8/18/2017		6.4	9.9
SB-22 (6.5-7.0')	8/18/2017		8.6	13.5
SB-22 (9.5-10.0')	8/18/2017		8.6	18.0
SB-22 (14.5-15.0')	8/18/2017		7.4	6.8
SB-23 (0-0.5')	8/16/2017		6.4	45.3
SB-23 (1.5-2.0')	8/16/2017		6.2	14.4
SB-23 (4.5-5.0')	8/16/2017		10.2	15.9
SB-24 (0-0.5')	8/16/2017		10.8	32.1
SB-24 (1.5-2.0')	8/16/2017		8.8	18.5
SB-24 (4.5-5.0')	8/16/2017		9.6	25.1
SB-25 (0-0.5')	8/17/2017		8.5	16.4
SB-25 (1.5-2.0')	8/17/2017		7.5	12.8
SB-25 (4.5-5.0')	8/17/2017		7.6	15.1
SB-26 (0-0.5')	8/17/2017		8.6	17.3
SB-26 (1.5-2.0')	8/17/2017		16.9	33.8
SB-26 (4.5-5.0')	8/17/2017		15.1	22.6
SB-26 (9.5-10.0')	8/17/2017		16.2	15.3
SB-27 (0-0.5')	8/17/2017		16.7	63.3
SB-27 (1.5-2.0')	8/17/2017		12.6	36.1
SB-27 (9.5-10.0')	8/17/2017		7.2	12.5
SB-27 (24.5-25.0')	8/17/2017		6.4	12.5

Notes:

<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)

mg/kg - milligram per kilogram

NA- Not Analyzed

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration



**TABLE 1A - Soil Analytical Results - Arsenic and Lead**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Constituent			Inorganics	
			Arsenic	Lead
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	35	1000
SB-28 (0-0.5')	8/16/2017		<b>10.3</b>	<b>2250</b>
SB-28 (0-0.5') <sup>R1</sup>	8/16/2017		NA	57.8
SB-28 (0-0.5') <sup>R2</sup>	8/16/2017		NA	32.4
SB-28 (0-0.5') <sup>R3</sup>	8/16/2017		NA	28.8
SB-28 (0.5-1.0')	8/16/2017		NA	27.6
SB-28 (1.0-1.5')	8/16/2017		NA	11.8
SB-28 (1.5-2.0')	8/16/2017		9.1	26.6
SB-28 (4.5-5.0')	8/16/2017		9.2	18.5
SB-28N (0.5-1.0')	9/13/2017		NA	23
SB-28N (1.0-1.5')	9/13/2017		NA	23
SB-28E (0.5-1.0')	9/13/2017		NA	25
SB-28E (1.0-1.5')	9/13/2017		NA	20
SB-28S (0.5-1.0')	9/13/2017		NA	18
SB-28S (1.0-1.5')	9/13/2017		NA	20
SB-28W (0.5-1.0')	9/13/2017		NA	20
SB-28W (1.0-1.5')	9/13/2017		NA	23
SB-29 (0-0.5')	8/17/2017		7.9	16.9
SB-29 (1.5-2.0')	8/17/2017		9.8	12.5
SB-29 (4.5-5.0')	8/17/2017		9.6	13
SB-29 (9.5-10.0')	8/17/2017		10.1	19.6
SB-29 (24.5-25.0')	8/17/2017		9.4	12.7
SB-30 (0-0.5')	8/16/2017		7.9	19.2
SB-30 (1.5-2.0')	8/16/2017		9.1	18.9
SB-30 (4.5-5.0')	8/16/2017		10.9	16.0
SB-31 (0-0.5')	8/16/2017		33.3	73.2
SB-31 (0.5-1.0')	8/16/2017		24.2	49.8
Dup-3 (0.5-1.0')	8/16/2017		31.9	53.8
SB-32 (0-0.5')	8/16/2017		14.1	70.3
SB-32 (0.5-1.0')	8/16/2017		9.7	26.6
SB-33 (0-0.5')	8/16/2017		13.5	95.6
SB-34 (0-0.5')	8/16/2017		3.6	10.5
SED-1 (0-0.5')	8/16/2017		11.8	172
Dup-2 (0-0.5')	8/16/2017		9.6	130
SED-1 (1.5-2.0')	8/16/2017		10.5	15

Notes:

<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)

<sup>R#</sup> - Sample re-analysis results

mg/kg - milligram per kilogram

NA- Not Analyzed

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

**TABLE 1B - Soil Analytical Results - Priority Pollutant Pesticides**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Constituent			Priority Pollutant Pesticides																			
			Aldrin	Alpha - BHC	Beta - BHC	Gamma - BHC	Delta - BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	3.6	5.6	20	44	NE	160	150	180	150	3.8	10000	NE	NE	380	NE	NE	11	6.2	6300	32
SB-17 (0-0.5')	8/17/2017		<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.0194	<0.0194	<0.0194	<0.0194	<0.01	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<0.01	<0.01	<0.0194	<0.206
SB-17 (1.5-2.0')	8/17/2017		<0.0092	<0.0092	<0.0092	<0.0092	<0.0092	<0.0184	<0.0179	<0.0179	<0.0179	<0.0179	<0.0092	<0.0179	<0.0179	<0.0179	<0.0179	<0.0179	<0.0092	<0.0092	<0.0179	<0.19
SB-17 (19.5-20.0')	8/17/2017		<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0222	0.0048 J	<0.0216	0.0057 J	<0.0216	<0.0111	<0.0216	<0.0216	<0.0216	<0.0216	<0.0216	<0.0111	<0.0111	<0.0216	<0.229
SB-18 (0-0.5')	8/17/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	<0.0191	0.00829	0.0197	<0.0191	<0.0098	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0098	<0.0191	<0.203
SB-18 (1.5-2.0')	8/17/2017		<0.0113	<0.0113	<0.0113	<0.0113	<0.0113	<0.0226	<0.022	0.0118 J	<0.022	<0.022	<0.0113	<0.022	<0.022	<0.022	<0.022	<0.022	<0.0113	<0.0113	<0.022	<0.233
SB-18 (4.5-5.0')	8/17/2017		<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0208	<0.0201	<0.0201	<0.0201	<0.0104	<0.0201	<0.0201	<0.0201	<0.0201	<0.0201	<0.0201	<0.0104	<0.0104	<0.0201	<0.213
SB-19 (0-0.5')	8/17/2017		<0.0093	<0.0093	<0.0093	<0.0093	<0.0093	<0.0186	<0.0181	<0.0181	<0.0181	<0.0181	<0.0093	<0.0181	<0.0181	<0.0181	<0.0181	<0.0181	<0.0093	<0.0093	<0.0181	<0.192
SB-19 (1.5-2.0')	8/17/2017		<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0208	<0.0202	<0.0202	<0.0202	<0.0104	<0.0202	<0.0202	<0.0202	<0.0202	<0.0202	<0.0202	<0.0104	<0.0104	<0.0202	<0.214
SB-19 (4.5-5.0')	8/17/2017		<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.206	<0.0199	<0.0199	<0.0199	<0.0199	<0.0103	<0.0199	<0.0199	<0.0199	<0.0199	<0.0199	<0.0103	<0.0103	<0.0199	<0.211
SB-20 (0-0.5')	8/18/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0210	<0.0210	<0.0210	<0.0210	<0.0108	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	<0.0108	<0.0108	<0.0210	<0.223
SB-20 (1.5-2.0')	8/18/2017		<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0218	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0212	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0109	<0.0212	<0.225
SB-20 (4.5-5.0')	8/18/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0209	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0108	<0.0209	<0.222
SB-21 (0-0.5')	8/17/2017		<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0192	<0.0186	<0.0186	<0.0186	<0.0186	<0.0096	<0.0186	<0.0186	<0.0186	<0.0186	<0.0186	<0.0096	<0.0096	<0.0186	<0.198
SB-21 (1.5-2.0')	8/17/2017		<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0204	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0102	<0.0198	<0.210
SB-21 (4.5-5.0')	8/17/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	<0.0203	<0.0203	<0.0203	<0.0203	<0.0105	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0105	<0.0105	<0.0203	<0.215
SB-22 (0-0.5')	8/18/2017		<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0194	<0.0188	0.005 J	<0.0188	<0.0188	<0.0097	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0097	<0.0097	<0.0188	<0.199
SB-22 (4.5-5.0')	8/18/2017		<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0218	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0212	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0109	<0.0212	<0.225
SB-22 (6.5-7.0')	8/18/2017		<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	<0.0213	<0.0213	0.0138 J	<0.0213	<0.0110	<0.0213	<0.0213	<0.0213	<0.0213	<0.0213	<0.0110	<0.0110	<0.0213	<0.226
SB-22 (9.5-10.0')	8/18/2017		<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0218	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0212	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0109	<0.0212	<0.225
SB-22 (14.5-15.0')	8/18/2017		<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0228	<0.0221	<0.0221	<0.0221	<0.0221	<0.0114	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	<0.0114	<0.0114	<0.0221	<0.235
SB-23 (0-0.5')	8/16/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.207
SB-23 (1.5-2.0')	8/16/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0098	<0.0191	<0.202
SB-23 (4.5-5.0')	8/16/2017		<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0204	<0.0199	<0.0199	<0.0199	<0.0199	<0.0102	<0.0199	<0.0199	<0.0199	<0.0199	<0.0199	<0.0102	<0.0102	<0.0199	<0.211
SB-24 (0-0.5')	8/16/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0209	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0108	<0.0209	<0.221
SB-24 (1.5-2.0')	8/16/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	0.0026 J	<0.0191	<0.0191	<0.0191	<0.0098	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0098	<0.0191	<0.202
SB-24 (4.5-5.0')	8/16/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	0.0343	<0.0204	0.0725	<0.0204	<0.0105	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0105	<0.0204	<0.216
SB-25 (0-0.5')	8/17/2017		<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0192	<0.0187	0.161	0.0657	<0.0187	<0.0096	<0.0187	<0.0187	<0.0187	<0.0187	<0.0187	<0.0096	<0.0096	<0.0187	<0.198
SB-25 (1.5-2.0')	8/17/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0195	<0.0195	0.0029 J	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.207
SB-25 (4.5-5.0')	8/17/2017		<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0192	<0.0186	<0.0186	<0.0186	<0.0186	<0.0096	<0.0186	<0.0186	<0.0186	<0.0186	<0.0186	<0.0096	<0.0096	<0.0186	<0.197

**Notes:**

<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)

mg/kg - milligram per kilogram

NE - Not Established

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

**TABLE 1B - Soil Analytical Results - Priority Pollutant Pesticides**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Constituent			Priority Pollutant Pesticides																			
			Aldrin	Alpha - BHC	Beta - BHC	Gamma - BHC	Delta - BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	3.6	5.6	20	44	NE	160	150	180	150	3.8	10000	NE	NE	380	NE	NE	11	6.2	6300	32
SB-26 (0-0.5')	8/17/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0195	0.013 J	0.0054 J	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.207
SB-26 (1.5-2.0')	8/17/2017		<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0212	<0.0206	<0.0206	<0.0206	<0.0206	<0.0106	<0.0206	<0.0206	<0.0206	<0.0206	<0.0206	<0.0106	<0.0106	<0.0206	<0.219
SB-26 (4.5-5.0')	8/17/2017		<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.0206	<0.0199	<0.0199	<0.0199	<0.0199	<0.0103	<0.0199	<0.0199	<0.0199	<0.0199	<0.0199	<0.0103	<0.0103	<0.0199	<0.211
SB-26 (9.5-10.0')	8/17/2017		<0.0112	<0.0112	<0.0112	<0.0112	<0.0112	<0.0224	<0.0217	<0.0217	<0.0217	<0.0217	<0.0112	<0.0217	<0.0217	<0.0217	<0.0217	<0.0217	<0.0112	<0.0112	<0.0217	<0.230
SB-27 (0-0.5')	8/17/2017		<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0204	0.0055 J	0.125	0.048	<0.0198	<0.0102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0102	<0.0198	<0.210
SB-27 (1.5-2.0')	8/17/2017		<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.0188	<0.0183	0.0128 J	0.0049 J	<0.0183	<0.0094	<0.0183	<0.0183	<0.0183	<0.0183	<0.0183	<0.0094	<0.0094	<0.0183	<0.194
SB-27 (9.5-10.0')	8/17/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.0214	<0.0214	<0.0214	<0.0214	<0.011	<0.0214	<0.0214	<0.0214	<0.0214	<0.0214	<0.011	<0.011	<0.0214	<0.227
SB-27 (24.5-25.0')	8/17/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0098	<0.0191	<0.203
SB-28 (0-0.5')	8/16/2017		<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0212	0.0152 J	0.185	0.0538	<0.0206	<0.0106	<0.0206	<0.0206	<0.0206	<0.0206	<0.0206	<0.0106	<0.0106	<0.0206	<0.219
SB-28 (1.5-2.0')	8/16/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	0.0079 J	0.0162 J	0.0194	<0.0190	<0.0098	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	<0.0098	<0.0098	<0.0190	<0.201
SB-28 (4.5-5.0')	8/16/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0197	0.0465	0.0108 J	<0.0197	<0.0101	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<0.0101	<0.0101	<0.0197	<0.209
SB-29 (0-0.5')	8/17/2017		<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0192	<0.0186	<0.0186	<0.0186	<0.0186	<0.0096	<0.0186	<0.0186	<0.0186	<0.0186	<0.0186	<0.0096	<0.0096	<0.0186	<0.198
SB-29 (1.5-2.0')	8/17/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0209	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0108	<0.0209	<0.222
SB-29 (4.5-5.0')	8/17/2017		<0.0112	<0.0112	<0.0112	<0.0112	<0.0112	<0.0222	<0.0218	<0.0218	<0.0218	<0.0218	<0.0112	<0.0218	<0.0218	<0.0218	<0.0218	<0.0218	<0.0112	<0.0112	<0.0218	<0.232
SB-29 (9.5-10.0')	8/17/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0209	<0.0209	<0.0209	<0.0209	<0.0209	<0.0108	<0.0108	<0.0209	<0.222
SB-29 (24.5-25.0')	8/17/2017		<0.0129	<0.0129	<0.0129	<0.0129	<0.0129	<0.0258	<0.0250	<0.0250	<0.0250	<0.0250	<0.0129	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0129	<0.0129	<0.0250	<0.265
SB-30 (0-0.5')	8/16/2017		<0.0102	0.0031 J	0.0022 J	0.0019 J	<0.0102	<0.0204	0.045	0.726	0.197	<0.0198	<0.0102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0102	<0.0198	<0.210
SB-30 (1.5-2.0')	8/16/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	0.0021 J	0.0215	0.011 J	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.207
SB-30 (4.5-5.0')	8/16/2017		<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0214	<0.0208	<0.0208	<0.0208	<0.0208	<0.0107	<0.0208	<0.0208	<0.0208	<0.0208	<0.0208	<0.0107	<0.0107	<0.0208	<0.221
SB-31 (0-0.5')	8/16/2017		<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0212	<51.600	24	<51.600	18.8	5.4	9.07	2.33	<2.07	<0.0207	1.21 J	<0.0106	<0.0106	<0.0207	<0.219
SB-31 (0.5-1.0')	8/16/2017		<0.0104	<0.0104	0.0256	0.0048 J	<0.0104	<0.0208	72.4	12.6	209	11.3	3.06	4.37	2.23	<2.02	<0.0202	0.395	<0.0104	<0.0104	<0.0202	<0.215
Dup-3 (0.5-1.0')	8/16/2017		<0.0104	<0.0104	<0.0104	0.0032 J	<0.0104	<0.0208	17.4	15.4	<10.100	13.2	3.41	6.93	2.65	<2.02	<0.0202	0.404	<0.0104	<0.0104	<0.0202	<0.214
SB-31 (2.5-3.0')	9/14/2017		<0.013	<0.013	0.0041 J	<0.013	<0.013	<0.032	0.039	0.05	1.4	0.074	<0.013	<0.013	<0.013	0.0032 J	<0.013	<0.013	<0.013	<0.013	<0.013	<0.077
SB-31 (3.5-4.0')	9/14/2017		<0.012	<0.012	0.0031 J	<0.012	<0.012	<0.031	0.026	0.032	0.8	0.035	<0.012	<0.012	<0.012	0.0032 J	<0.012	<0.012	<0.012	<0.012	<0.012	<0.074
SB-31 (4.5-5.0')	9/14/2017		<0.012	<0.012	0.0031 J	<0.012	<0.012	<0.031	0.026	0.043	0.92	0.032	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.074
SB-32 (0-0.5')	8/16/2017		<0.0105	0.0365	0.0936	0.027	0.0095 J	<0.021	95.6 J	28.9	560	9.13	1.99	0.0711	0.0396	2.16	<0.0204	0.226	0.0134	<0.0105	<0.0204	<0.216
SB-32 (0.5-1.0')	8/16/2017		<0.0102	<0.0102	0.0229	0.004 J	<0.0102	<0.0204	1.31	0.911	24.8	0.985	<0.0102	<0.0197	<0.0197	0.0493	<0.0197	0.0268	<0.0102	<0.0102	<0.0197	<0.209
SB-33 (0-0.5')	8/16/2017		<0.0102	0.0015 J	<0.0102	<0.0102	<0.0102	0.0057 J	0.381	3.83	2.12	0.796	<0.0102	0.0346	0.0109 J	0.105	<0.0198	0.037	<0.0102	<0.0102	<0.0198	<0.210
SB-34 (0-0.5')	8/16/2017		<0.0092	<0.0092	<0.0092	<0.0092	<0.0092	<0.0184	0.108	0.5	6.66	0.0582	<0.0092	<0.0178	<0.0178	0.0405	<0.0178	0.0084 J	<0.0092	<0.0092	<0.0178	<0.189
SED-1 (0-0.5')	8/16/2017		<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	0.0176 J	0.294	0.613	0.477	0.0394 J	<0.0203	<0.0395	<0.0395	0.0222 J	<0.0395	0.0077 J	<0.0203	<0.0203	<0.0395	<0.418
Dup-2 (0-0.5')	8/16/2017		<0.0206	<0.0206	<0.0206	<0.0206	<0.0206	0.0153 J	0.188	0.601	0.183	0.0337 J	<0.0206	<0.040	<0.040	0.0186 J	<0.040	<0.040	<0.0206	<0.0206	<0.040	<0.425
SED-1 (1.5-2.0')	8/16/2017		<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.023	0.0263	0.0068 J	0.0196 J	<0.0223	<0.0115	<0.0223	<0.0223	<0.0223	<0.0223	<0.0223	<0.0115	<0.0115	<0.0223	<0.236
SED-2 (0-0.5')	9/14/2017		<0.017	<0.017	<0.017	<0.017	<0.042	<0.017	0.0071 J	0.06	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
SED-2 (0.5-1.0')	9/14/2017		<0.013	<0.013	<0.013	<0.013	<0.032	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013
SED-3 (0-0.5')	9/14/2017		<0.014	<0.014	<0.014	<0.014	<0.035	<0.014	0.0065 J	0.03	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
SED-3 (0.5-1.0')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.031	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
SED-4 (0-0.5')	9/14/2017		<0.014	<0.014	<0.014	<0.014	<0.035	<0.014	<0.014	0.024	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
SED-4 (0.5-1.0')	9/14/2017		<0.012	<0.012	<0.012	<0.012	&															

Notes:

<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)

mg/kg - milligram per kilogram

NE - Not Established

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

**TABLE 1B - Soil Analytical Results - Priority Pollutant Pesticides**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Constituent			Priority Pollutant Pesticides																			
			Aldrin	Alpha - BHC	Beta - BHC	Gamma - BHC	Delta - BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	3.6	5.6	20	44	NE	160	150	180	150	3.8	10000	NE	NE	380	NE	NE	11	6.2	6300	32
MA-DP-1 (0'-0.5')	9/14/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.027	0.021	1.3	0.31	0.021	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.066
MA-DP-1 (0.5'-1.0')	9/14/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.028	<0.011	0.11 J	0.028	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.068
MA-DP-2 (0'-0.5')	9/14/2017		<0.013	<0.013	<0.013	<0.013	<0.013	<0.032	<0.013	0.089	0.025	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.076
MA-DP-2 (0.5'-1.0')	9/14/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.029	<0.011	0.062	0.0053 J	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.068
MA-DP-3 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.031	0.012	0.37	0.18	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.075
MA-DP-3 (0.5'-1.0')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.031	<0.12	0.15	0.013	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.073
MA-DP-4 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.029	0.023	1.2	0.051	0.0028 J	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.070
MA-DP-4 (0.5'-1.0')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.031	0.0072 J	0.32	0.011 J	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.075
MA-DP-5 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.030	0.48	2.6	8.2	0.11 J	<0.012	<0.012	<0.012	0.037	<0.012	0.0062 J	<0.012	<0.012	0.0053 J	<0.070
MA-DP-5 (0.5'-1.0')	9/14/2017		<0.012	<0.012	0.0034 J	<0.012	<0.012	<0.029	1.4	6.2	3.7	0.16	<0.012	<0.012	<0.012	0.041	<0.012	0.011 J	<0.012	<0.012	<0.012	<0.070
MA-DP-5 (1.0'-1.5')	9/14/2017		<0.012	<0.012	0.0034 J	<0.012	<0.012	<0.029	0.04	0.74	0.078	0.010 J	<0.012	<0.012	<0.012	0.041	<0.012	0.011 J	<0.012	<0.012	<0.012	<0.070
MA-DP-5 (2.0'-2.5')	9/14/2017		<0.013	<0.013	<0.013	<0.013	<0.013	<0.033	0.0076 J	0.057	0.053	0.0044 J	<0.013	<0.013	<0.013	0.0035 J	<0.013	<0.013	<0.013	<0.013	<0.013	<0.079
MA-DP-6 (0'-0.5')	9/14/2017		0.0037 J	<0.012	0.0033 J	<0.012	<0.012	<0.030	0.23	3.2	2.2	0.74	0.023	0.024	<0.012	0.05	<0.012	0.068	<0.012	<0.012	<0.012	<0.072
MA-DP-6 (0.5'-1.0')	9/14/2017		<0.061	<0.061	0.019 J	<0.061	<0.150	<0.029	0.61	3.1	1.9	0.86	<0.061	<0.012	<0.061	0.13	<0.061	0.15	<0.061	<0.061	<0.061	<0.36
MA-DP-8 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.031	<0.012	0.07	0.015	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.074
MA-DP-8 (0.5'-1.0')	9/14/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.029	<0.011	0.034	0.0046 J	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.069
MA-DP-9 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.029	0.0032 J	0.64	0.04	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.070
MA-DP-9 (0.5'-1.0')	9/14/2017		<0.013	<0.013	<0.013	<0.013	<0.013	<0.032	<0.013	0.71	0.017	0.0033 J	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.076
MA-DP-10 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.029	0.0031 J	0.32	0.052	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.069
MA-DP-10 (0.5'-1.0')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.029	<0.012	0.45	0.023	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.070
MA-DP-11 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.029	0.0084 J	0.57	0.074	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.069
MA-DP-11 (0.5'-1.0')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.029	0.0030 J	0.83	0.05	0.0037 J	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.069
MA-DP-12 (0'-0.5')	9/14/2017		<0.012	<0.012	<0.012	<0.012	<0.012	<0.028	0.045	1	0.24	0.059	0.015	0.0058 J	<0.012	0.038	<0.012	0.0065 J	<0.012	<0.012	<0.012	<0.066
MA-DP-12 (0.5'-1.0')	9/14/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.028	0.028	0.49	0.035	0.018	0.0020 J	<0.011	<0.011	0.038	<0.011	0.0023 J	<0.011	<0.011	<0.011	<0.066

Notes:

<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)

mg/kg - milligram per kilogram

NE - Not Established

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

TABLE 1C - Soil Analytical Results - Volatile Organic Compounds, Total Petroleum Hydrocarbons, Polycyclic Aromatic Hydrocarbons  
Project Shuttle  
Jefferson Orchard Site  
Jefferson County, West Virginia

Constituent			Volatile Organic Compounds (VOCs)				Total Petroleum Hydrocarbons			Polycyclic Aromatic Hydrocarbon															
			Benzene	Ethylbenzene	Toluene	Total Xylenes	DRO	GRO	ORO	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthrace	Benzo(g,h,i,) perylene	Benzo[a] pyrene	Benzo[b]fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo[a,h] anthracene	Fluoranthene	Fluorene	Indeno [1,2,3-cd] pyrene	Napthalene	Phenanthrene	Pyrene
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	57	280	820	260	NE	NE	NE	70000	80000	700000	88	33000	4.3	43	430	4300	4.3	44000	62000	43	180	700000	66000
SB-29 (0-0.5')	8/17/2017		<0.0023	<0.0023	<0.0023	<0.0068	<12.4	<9.71	<12.4	<0.0599	0.0136 J	<0.0599	0.0541 J	0.0946	0.0827	0.167	0.0603	0.0967	0.0136 J	0.0845	<0.0599	0.0878	<0.0599	0.0211 J	0.0918
SB-29 (1.5-2.0')	8/17/2017		<0.0023	<0.0023	<0.0023	<0.0068	<13.6	<10.4	<13.6	<0.0663	<0.0663	<0.0663	0.0201 J	<0.0663	<0.0663	<0.0663	<0.0663	<0.0663	<0.0663	0.0209 J	<0.0663	<0.0663	<0.0663	0.0123 J	0.0293 J
SB-29 (4.5-5.0')	8/17/2017		<0.0023	<0.0023	<0.0023	<0.0069	<14.2	<11.4	<14.2	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	<0.0670	
SB-29 (9.5-10.0')	8/17/2017		<0.0025	<0.0025	<0.0025	<0.0074	<13.3	<11.6	<13.3	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	
SB-29 (24.5-25.0')	8/17/2017		<0.003	<0.003	<0.003	<0.0089	<16.2	<15.5	<16.2	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	<0.0744	

Notes:  
<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)  
mg/kg - milligram per kilogram  
NE - Not Established  
**BOLD** - Detection  
J - Detected but below the Reporting Limit; therefore, result is an estimated concentration  
Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

TABLE 1D - Soil Analytical Results - Metals and Polychlorinated Biphenyls  
Project Shuttle  
Jefferson Orchard Site  
Jefferson County, West Virginia

Constituent			Metals								Organic	Polychlorinated Biphenyls (PCBs)								
			Barium	Cadmium	Chromium	Copper	Manganese	Mercury	Nickel	Vanadium	Formaldehyde	Arochlor-1016	Arochlor-1221	Arochlor-1232	Arochlor-1242	Arochlor-1248	Arochlor-1254	Arochlor-1260	Arochlor-1262	Arochlor-1268
Sample ID	Date	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	400000	980	1000000	9300	8000	230	4300	160	790	160	19	14	26	27	28	30	NE	NE
SB-22 (6.5-7.0')	8/18/2017		32	<0.63	27.9	25.8	901	0.21	32.7	48.4	<4.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-22 (9.5-10.0')	8/18/2017		49.7	<0.62	17.7	26.6	1350	0.18	22.7	55.3	<8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-22 (14.5-15.0')	8/18/2017		20.4	<0.65	12.4	11.5	451	0.13	13	41.4	<8.00	NA	NA	NA	NA	NA	NA	NA	NA	NA
SB-35 (0-0.5')	8/16/2017		NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.040	<0.040	<0.040	<0.040	<0.040	0.092	<0.040	<0.040	<0.040

Notes:  
<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2017)  
mg/kg - milligram per kilogram  
NE - Not Established  
NA- Not Analyzed  
**BOLD** - Detection  
J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

**TABLE 2A - Groundwater Analytical Results - Volatile Organic Compounds**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Volatile Organic Compounds (VOCs)	Groundwater De Minimis Standards <sup>1</sup> (ug/L)	Sample ID	Packing Shed Well	DUP-1 (Packing Shed Well)	Residential Well
		Date	8/15/2017	8/15/2017	8/15/2017
Acetone	14000		<10.0	<10.0	<10.0
Benzene	5		<1.0	<1.0	<1.0
Bromochloromethane	NE		<1.0	<1.0	<1.0
Bromodichloromethane	0.13		<1.0	<1.0	<1.0
Bromoform	3.3		<1.0	<1.0	<1.0
Bromomethane	7.5		<1.0	<1.0	<1.0
2-Butanone	5600		<10.0	<10.0	<10.0
Carbon Disulfide	810		<1.0	<1.0	<1.0
Carbon Tetrachloride	5		<1.0	<1.0	<1.0
Chlorobenzene	100		<b>0.32 J</b>	<1.0	<b>0.36 J</b>
Chlorodibromomethane	0.87		<1.0	<1.0	<1.0
Chloroethane	21000		<1.0	<1.0	<1.0
Chloroform	0.22		<b>0.66 J</b>	<b>1.5</b>	<b>0.38 J</b>
Chloromethane	190		<1.0	<1.0	<1.0
Cyclohexane	13000		<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	0.2		<7.0	<7.0	<7.0
1,2-Dibromoethane	0.05		<1.0	<1.0	<1.0
1,2-Dichlorobenzene	600		<1.0	<1.0	<1.0
1,3-Dichlorobenzene	600		<1.0	<1.0	<1.0
1,4-Dichlorobenzene	75		<1.0	<1.0	<1.0
Dichlorodifluoromethane	200		<1.0	<1.0	<1.0
1,1-Dichloroethane	2.8		<1.0	<1.0	<1.0
1,2-Dichloroethane	5		<1.0	<1.0	<1.0
1,1-Dichloroethene	7		<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	70		<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	100		<1.0	<1.0	<1.0
1,2-Dichloropropane	5		<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	NE		<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	NE		<1.0	<1.0	<1.0
Ethylbenzene	700		<1.0	<1.0	<1.0
Freon 113	57000		<1.0	<1.0	<1.0
2-Hexanone	NE		<5.0	<5.0	<5.0
Isopropylbenzene	450		<1.0	<1.0	<1.0
Methyl acetate	5300		<2.0	<2.0	<2.0
Methyl cyclohexane	NE		<1.0	<1.0	<1.0
Methyl t-Butyl Ether	14		<1.0	<1.0	<1.0
4-Methyl-2-Pentanone(MIBK)	1200		<5.0	<5.0	<5.0
Methylene Chloride	5		<1.0	<1.0	<1.0
Styrene	100		<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	0.076		<1.0	<1.0	<1.0
Tetrachloroethene	5		<1.0	<1.0	<1.0
Toluene	1000		<1.0	<1.0	<1.0
Total Xylenes	10000		<3.0	<3.0	<3.0
1,2,3-Trichlorobenzene	NE		<2.0	<2.0	<2.0
1,2,4-Trichlorobenzene	70		<2.0	<2.0	<2.0
1,1,1-Trichloroethane	200		<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5		<1.0	<1.0	<1.0
Trichloroethene	5		<1.0	<1.0	<1.0
Trichlorofluoromethane	1100		<1.0	<1.0	<1.0
Vinyl Chloride	2		<1.0	<1.0	<1.0
o-Xylene	NE		<1.0	<1.0	<1.0
mp-Xylene	NE		<2.0	<2.0	<2.0

Notes:

<sup>1</sup> - West Virginia Groundwater De Minimis Standards (June 2017)

ug/L - microgram per liter

NE - Not Established

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detection limits reported above WV Groundwater De Minimis Standards are highlighted blue

Detections above WV Groundwater De Minimis Standards are highlighted yellow



**TABLE 2B - Groundwater Analytical Results - Pesticides**  
**Project Shuttle**  
**Jefferson Orchard Site**  
**Jefferson County, West Virginia**

Priority Pollutant Pesticides	Groundwater De Minimis Standards <sup>1</sup> (ug/L)	Sample ID	Packing Shed Well	DUP-1 (Packing Shed Well)	Residential Well
		Date	8/15/2017	8/15/2017	8/15/2017
Aldrin	0.00092		<0.019	<0.020	<0.019
Alpha-BHC	0.0072		<0.019	<0.020	<0.019
Beta-BHC	0.025		<0.019	<0.020	<0.019
Delta-BHC	NE		<0.019	<0.020	<0.019
Gamma-BHC	0.2		<0.019	<0.020	<0.019
Chlordane	2		<0.038	<0.020	<0.019
4,4-DDD	0.032		<0.019	<0.020	<0.019
4,4-DDE	0.046		<0.019	<0.020	<0.019
4,4-DDT	0.23		<0.019	<0.020	<0.019
Dieldrin	0.00072		<0.019	<0.020	<0.019
Endosulfan I	31		<0.019	<0.020	<0.019
Endosulfan II	NE		<0.019	<0.020	<0.019
Endosulfan sulfate	NE		<0.019	<0.020	<0.019
Endrin	2		<0.019	<0.020	<0.019
Endrin aldehyde	NE		<0.019	<0.020	<0.019
Endrin ketone	NE		<0.019	<0.020	<0.019
Heptachlor	0.4		<0.019	<0.020	<0.019
Heptachlor epoxide	0.2		<0.019	<0.020	<0.019
Methoxychlor	40		<0.019	<0.020	<0.019
Toxaphene	3		<0.94	<0.98	<0.95

Notes:

<sup>1</sup> - West Virginia Groundwater De Minimis Standards (June 2017)

ug/L - microgram per liter

NE - Not Established

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detection limits reported above WV Groundwater De Minimis Standards are highlighted blue

Detections above WV Groundwater De Minimis Standards are highlighted yellow

TABLE 2C - QAQC  
Project Shuttle  
Jefferson Orchard Site  
Jefferson County, West Virginia

Constituent	Groundwater De Minimis Standards <sup>1</sup> (ug/L)	Sample ID	TB-1	TB-2	ER-1	ER-2
		Date	8/17/2017	8/18/2017	8/16/2017	8/18/2017
Inorganics						
Arsenic	10		NA	NA	<3.3	<3.3
Lead	15		NA	NA	<2.2	<2.2
Total Petroleum Hydrocarbons						
Diesel Range Organics	NE		NA	NA	NA	<170
Gasoline Range Organics	NE		NA	NA	NA	<100
Oil range Organics	NE		NA	NA	NA	<210
Volatile Organic Compounds (VOCs)						
Acetone	14000		<10.0	NA	NA	NA
Benzene	5		<1.0	<1.0	NA	<1.0
Bromochloromethane	NE		<1.0	NA	NA	NA
Bromodichloromethane	0.13		<1.0	NA	NA	NA
Bromoform	3.3		<1.0	NA	NA	NA
Bromomethane	7.5		<1.0	NA	NA	NA
2-Butanone	5600		<10.0	NA	NA	NA
Carbon Disulfide	810		<1.0	NA	NA	NA
Carbon Tetrachloride	5		<1.0	NA	NA	NA
Chlorobenzene	100		0.28 J	NA	NA	NA
Chlorodibromomethane	0.87		<1.0	NA	NA	NA
Chloroethane	21000		<1.0	NA	NA	NA
Chloroform	0.22		<1.0	NA	NA	NA
Chloromethane	190		<1.0	NA	NA	NA
Cyclohexane	13000		<1.0	NA	NA	NA
1,2-Dibromo-3-chloropropane	0.2		<7.0	NA	NA	NA
1,2-Dibromoethane	0.05		<1.0	NA	NA	NA
1,2-Dichlorobenzene	600		<1.0	NA	NA	NA
1,3-Dichlorobenzene	600		<1.0	NA	NA	NA
1,4-Dichlorobenzene	75		<1.0	NA	NA	NA
Dichlorodifluoromethane	200		<1.0	NA	NA	NA
1,1-Dichloroethane	2.8		<1.0	NA	NA	NA
1,2-Dichloroethane	5		<1.0	NA	NA	NA
1,1-Dichloroethene	7		<1.0	NA	NA	NA
cis-1,2-Dichloroethene	70		<1.0	NA	NA	NA
trans-1,2-Dichloroethene	100		<1.0	NA	NA	NA
1,2-Dichloropropane	5		<1.0	NA	NA	NA
cis-1,3-Dichloropropene	NE		<1.0	NA	NA	NA
trans-1,3-Dichloropropene	NE		<1.0	NA	NA	NA
Ethylbenzene	700		<1.0	<1.0	NA	<1.0
Freon 113	57000		<1.0	NA	NA	NA
2-Hexanone	NE		<5.0	NA	NA	NA
Isopropylbenzene	450		<1.0	NA	NA	NA
Methyl acetate	5300		<2.0	NA	NA	NA
Methyl cyclohexane	NE		<1.0	NA	NA	NA
Methyl t-Butyl Ether	14		<1.0	NA	NA	NA
4-Methyl-2-Pentanone(MIBK)	1200		<5.0	NA	NA	NA
Methylene Chloride	5		<1.0	NA	NA	NA
Styrene	100		<1.0	NA	NA	NA
1,1,2,2-Tetrachloroethane	0.076		<1.0	NA	NA	NA
Tetrachloroethene	5		<1.0	NA	NA	NA
Toluene	1000		<1.0	<1.0	NA	<1.0
Total Xylenes	10000		<3.0	<3.0	NA	<3.0
1,2,3-Trichlorobenzene	NE		<2.0	NA	NA	NA
1,2,4-Trichlorobenzene	70		<2.0	NA	NA	NA
1,1,1-Trichloroethane	200		<1.0	NA	NA	NA
1,1,2-Trichloroethane	5		<1.0	NA	NA	NA
Trichloroethene	5		<1.0	NA	NA	NA
Trichlorofluoromethane	1100		<1.0	NA	NA	NA
Vinyl Chloride	2		<1.0	NA	NA	NA
p-Xylene	NE		<1.0	NA	NA	NA
mp-Xylene	NE		<2.0	NA	NA	NA
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	240		NA	NA	NA	<1.6
Acenaphthylene	320		NA	NA	NA	<1.6
Anthracene	1800		NA	NA	NA	<1.6
Benzo(a)anthracene	0.012		NA	NA	NA	<1.6
Benzo(a)pyrene	0.2		NA	NA	NA	<1.6
Benzo(b)fluoranthene	0.034		NA	NA	NA	<1.6
Benzo(g,h,i)perylene	600		NA	NA	NA	<1.6
Benzo(k)fluoranthene	0.34		NA	NA	NA	<1.6
Chrysene	3.4		NA	NA	NA	<1.6
Dibenz(a,h)anthracene	0.0034		NA	NA	NA	<1.6
Fluoranthene	800		NA	NA	NA	<1.6
Fluorene	150		NA	NA	NA	<1.6
Indeno(1,2,3-cd)pyrene	0.034		NA	NA	NA	<1.6
Naphthalene	0.17		NA	NA	NA	<1.6
Phenanthrene	6000		NA	NA	NA	<1.6
Pyrene	79		NA	NA	NA	<1.6
Priority Pollutant Pesticides						
Aldrin	0.00092		NA	NA	<0.021	<0.021
Alpha-BHC	0.0072		NA	NA	<0.021	<0.021
Beta-BHC	0.025		NA	NA	<0.021	<0.021
Delta-BHC	NE		NA	NA	<0.021	<0.021
Gamma-BHC	0.2		NA	NA	<0.021	<0.021
Chlordane	2		NA	NA	<0.021	<0.021
4,4-DDD	0.032		NA	NA	0.019 J	<0.021
4,4-DDE	0.046		NA	NA	<0.021	<0.021
4,4-DDT	0.23		NA	NA	0.19	<0.021
Dieldrin	0.00072		NA	NA	0.011 J	<0.021
Endosulfan I	31		NA	NA	<0.021	<0.021
Endosulfan II	NE		NA	NA	<0.021	<0.021
Endosulfan sulfate	NE		NA	NA	<0.021	<0.021
Endrin	2		NA	NA	<0.021	<0.021
Endrin aldehyde	NE		NA	NA	<0.021	<0.021
Endrin ketone	NE		NA	NA	<0.021	<0.021
Heptachlor	0.4		NA	NA	<0.021	<0.021
Heptachlor epoxide	0.2		NA	NA	<0.021	<0.021
Methoxychlor	40		NA	NA	<0.021	<0.021
Toxaphene	3		NA	NA	<1.0	<1.0

Notes:

<sup>1</sup> - West Virginia Groundwater De Minimis Standards (June 2017)

ug/L - microgram per liter

NE - Not Established

TB - Trip blank sample

ER - Equipment rinse blank sample

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detection limits reported above WV Groundwater De Minimis Standards are highlighted blue

Detections above WV Groundwater De Minimis Standards are highlighted yellow

*Appendix A*  
*Calibration Logs*

## Calibration Log

Project Name: Roxul  
Project Number: 0407978  
Page: 1 of 1

By: T. Fewell & R. Baisden  
Date: 8/16/2017 to 8/18/2017  
Instrument SN: 592-000359

Date	Time	Instrument	Standard	Standard Concentration	Meter Reading	Comments
8/16/2017	8:00	MiniRAE 3000	Isobutylene	100 ppm	100ppm	--
8/17/2017	8:20	MiniRAE 3000	Isobutylene	100 ppm	100ppm	--
8/18/2017	7:45	MiniRAE 3000	Isobutylene	100 ppm	100ppm	--

*Appendix B*  
*Soil Boring Logs*



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-17**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/17/2017  
FINISH 08/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 324676.129  
EASTING 2426173.15  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 25 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION		STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA				
						SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks	
5		[Topsoil- silt, organic matter, trace sand, some clay]	0.5	ML			60/60	0	SB-17 [(0-0.5ft) (28, 46, 56)]	
		(ML) [Silt and Clay, trace sand, some fine gravel, not very plastic, light brown, moist]				0		SB-17 [(0.5-1ft) (28, 46, 56)]		
			0			SB-17 [(1-1.5ft) (28, 46, 56)]				
			0			SB-17 [(1.5-2ft) (28, 46, 56)]				
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REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead

BORING LOG NON\_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-18**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/17/2017  
FINISH 08/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 324449.932  
EASTING 2426357.831  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 5 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil- silt and clay, fine sand, ditrital]	0.5	ML			60/60	0	SB-18 [(0-0.5ft) (28, 46, 56)]
	(ML) [Silt and clay, trace sand and fine gravel, red to brown, medium plastic, moist]						0	SB-18 [(0.5-1ft) (28, 46, 56)]
							0	SB-18 [(1-1.5ft) (28, 46, 56)]
							0	SB-18 [(1.5-2ft) (28, 46, 56)]
							0	
2							0	
3							0	
4							0	
							0	SB-18 [(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead





PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-19**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/17/2017  
FINISH 08/17/2017


HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 323722.87  
EASTING 2426135.915  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 5 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil- silt and clay, trace sand, ditrital, dark brown, moist]	0.5	ML			60/60	0	SB-19 [(0-0.5ft) (28, 46, 56)]
	(ML) [Silt and clay, trace sand and fine gravel, light brown to tan, medium plastic, moist]						0	SB-19 [(0.5-1ft) (28, 46, 56)]
							0	SB-19 [(1-1.5ft) (28, 46, 56)]
							0	SB-19 [(1.5-2ft) (28, 46, 56)]
							0	
2								
3								
4								
							0	SB-19 [(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead



PROJECT:

Roxul  
NON-VRP Site Characterization

BORING # **SB-20**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

A-Zone  
West Virginia

DRILLING FOREMAN

Eric Lindberg

DRILLING METHOD

Direct Push

DRILLING EQUIPMENT

Geoprobe 7822DT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/18/2017

FINISH

08/18/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))

NORTHING 323519.724

EASTING 2426356.05

VERTICAL DATUM ELEVATION

BOREHOLE DEPTH

15 ft

BOREHOLE DIAMETER

2 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead

BORING LOG NON\_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-21**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/17/2017  
FINISH 08/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 323511.873  
EASTING 2426552.115  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 5 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt and clay, trace sand and gravel, loose, ditrital, moist]	0.5	ML			60/60	0	SB-21 [(0-0.5ft) (28, 46, 56)]
	(ML) [Silt and clay, some gravel, medium plastic, tan to light brown, moist]						0	SB-21 [(0.5-1ft) (28, 46, 56)]
							0	SB-21 [(1-1.5ft) (28, 46, 56)]
							0	SB-21 [(1.5-2ft) (28, 46, 56)]
							0	
2								
3								
4								
							0	SB-21 [(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-22**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/18/2017  
FINISH 08/18/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 323453.349  
EASTING 2426112.562  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 25 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA							
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks				
5	[Topsoil, silt and clay, loose, some sand and gravel, dark brown, moist]	0.5	ML			60/60	0	SB-22 [(0-0.5ft) (28, 46, 56)]				
	(ML) [Silt and clay, trace sand and gravel, plastic, light brown]	0					SB-22 [(0.5-1ft) (28, 46, 56)]					
		0					SB-22 [(1-1.5ft) (28, 46, 56)]					
		0					SB-22 [(1.5-2ft) (28, 46, 56)]					
		0										
	10	(SP-SM) [Fine sand and silt, some clay, trace gravel, loose light brown, moist]					5	SP-SM		60/60	0	SB-22 [(4.5-5ft) (28, 46, 56)]
		(MLS) [Silt and clay, some fine sand, light brown, plastic, trace gravel, moist. Fine sand lens at 9.0 feet]					0					
							0	SB-22 [(6.5-7ft) (28, 42)]				
							0					
							0	SB-22 [(9.5-10ft) (28, 42)]				
15		(MLS) [Silt and sand, stiff, light brown to tan, trace gravel, moist]	12	MLS		60/60	0					
		(ML) [Silt and clay, some fine sand, medium plastic, light brown, moist]	0									
			0									
			0									
			0	SB-22 [(14.5-15ft) (28, 42)]								
	20	(ML) [Silt and clay, some fine sand, medium plastic, light brown, moist (more fine sand and fine gravel than 14-15'depth)]	15	ML				60/60	0			
			0									
			0									
			0									
			0	SB-22 [(19.5-20ft) (28, 46, 56)]								
		(ML) [Silt and clay, some fine sand, medium plastic, light brown, moist (more fine sand and fine gravel than 15-20'depth)]	20	ML		60/60			0			
			0									
			0									
			0									
			0	SB-22 [(24.5-25ft) (28, 46, 56)]								

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
42 = RCRA Metals  
46 = Arsenic  
56 = Lead

BORING LOG NON\_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-23**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

West Virginia

DRILLING FOREMAN

DRILLING METHOD

Hand Auger

DRILLING EQUIPMENT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/16/2017

FINISH

08/16/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))

NORTHING

323213.415

EASTING

2425849.614

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH




5 ft

BOREHOLE DIAMETER

4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
1	(ML) [Silt-organic, ditrital, loose, trace gravel, some sand, dark brown, moist]	0.5	ML			60/60	0	SB-23 (0-0.5') SB-23 (0-0.5') [(0-0.5ft) (28, 46, 56)]
	0						SB-23 (0-0.5') SB-23 (0-0.5') [(0.5-1ft) (28, 46, 56)]	
	0						SB-23 (0-0.5') SB-23 (0-0.5') [(1-1.5ft) (28, 46, 56)]	
	0						SB-23 (0-0.5') SB-23 (0-0.5') [(1.5-2ft) (28, 46, 56)]	
2			ML			60/60	0	
3							0	
							0	
							0	
4	(ML) [Silt and gravel, some clay and sand, loose, brown, moist]	4	ML				0	SB-23 (0-0.5') SB-23 (0-0.5') [(4.5-5ft) (28, 46, 56)]

REMARKS:


LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead

BORING LOG NON\_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17

		<b>PROJECT:</b> Roxul NON-VRP Site Characterization		<b>BORING # SB-24</b>	
				ERM PROJECT # 0407978 SHEET 1 OF 1	
<b>DRILLING CONTRACTOR</b> West Virginia			<b>ERM REPRESENTATIVE</b> R. Baisden		
<b>DRILLING FOREMAN</b> Hand Auger			<b>OFFICE LOCATION</b> Hurricane, WV		
<b>DRILLING METHOD</b> Hand Auger			<b>DATE: START</b> 08/16/2017		
<b>DRILLING EQUIPMENT</b>			<b>FINISH</b> 08/16/2017		
<b>HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))</b>			<b>BOREHOLE DEPTH</b> 5 ft		
<b>NORTHING</b> 323159.193			<b>BOREHOLE DIAMETER</b> 4 in		
<b>EASTING</b> 2426257.1			<b>DEPTH TO WATER (INITIAL) ▼</b>		
<b>VERTICAL DATUM</b> ELEVATION			<b>DEPTH TO WATER (FINAL) ▼</b>		



  

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
						SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		(ML) [Silt, organic, some clay, ditrital, loose, dark brown, moist]		ML				0	SB-24 [(0-0.5ft) (28, 46, 56)]
								0	SB-24 [(0.5-1ft) (28, 46, 56)]
1		(ML) [Silt and clay, trace sand, tan to light brown, plastic, moist]	1					0	SB-24 [(1-1.5ft) (28, 46, 56)]
								0	SB-24 [(1.5-2ft) (28, 46, 56)]
2							60/60	0	
				ML				0	
3								0	
								0	
4								0	SB-24 [(4.5-5ft) (28, 46, 56)]

<b>REMARKS:</b>	<b>LAB ANALYSIS:</b> 28 = Pesticides 46 = Arsenic 56 = Lead
-----------------	--

BORING LOG NON\_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17

		PROJECT:		BORING # <b>SB-25</b>				
		Roxul NON-VRP Site Characterization		ERM PROJECT # 0407978				
				SHEET 1 OF 1				
DRILLING CONTRACTOR		A-Zone West Virginia		ERM REPRESENTATIVE		R. Baisden		
DRILLING FOREMAN		Eric Lindberg		OFFICE LOCATION		Hurricane, WV		
DRILLING METHOD		Direct Push		DATE: START		08/17/2017		
DRILLING EQUIPMENT		Geoprobe 7822DT		FINISH		08/17/2017		
HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))				BOREHOLE DEPTH				5 ft
NORTHING				BOREHOLE DIAMETER				2 in
EASTING				DEPTH TO WATER (INITIAL) ▼				
VERTICAL DATUM				ELEVATION				
				DEPTH TO WATER (FINAL) ▼				
DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
1	[Topsoil, silt and clay, some sand and gravel, ditrital, brown, moist]	0.5	ML			60/60	0	SB-25 [(0-0.5ft) (28, 46, 56)]
	0						SB-25 [(0.5-1ft) (28, 46, 56)]	
	0						SB-25 [(1-1.5ft) (28, 46, 56)]	
	0						SB-25 [(1.5-2ft) (28, 46, 56)]	
	0							
2	(ML) [Silt and clay, some sand, trace gravel, medium plastic, light brown, moist]						0	
							0	
3							0	
							0	
4							0	
							0	SB-25 [(4.5-5ft) (28, 46, 56)]
REMARKS:		LAB ANALYSIS: 28 = Pesticides 46 = Arsenic 56 = Lead						



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-26**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/17/2017  
FINISH 08/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 322878.587  
EASTING 2426096.401  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 25 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
5	[Topsoil, silt and clay, some gravel and sand, black, loose, moist]	0.5						SB-26 [(0-0.5ft) (28, 46, 56)]
	(ML) [Silt and clay, stiff, some fine sand, trace gravel, light brown to tan, dry]		ML			60/60	0	SB-26 [(1.5-2ft) (28, 46, 56)]
								SB-26 [(4.5-5ft) (28, 46, 56)]
10	(ML) [Silt and clay, stiff, some fine sand, trace gravel, light brown to tan, dry (less sand and gravel and more moist than 0.5-7.5 foot interval)]	7.5	ML			60/60	0	SB-26 [(9.5-10ft) (28, 46, 56)]
15	(SM) [Fine sand and silt, more silt, loose, moist]	13.5	SM			60/60	0	
	(SM) [Fine sand and silt, more silt, loose, light brown, moist]	14	SM					
	(ML) [Silt and clay, some fine sand, plastic, stiff, light brown, moist]	14.2	ML			60/60	0	
20	(SM) [Fine sand and silt, loose, light brown and tan, moist]	18.5	SM			60/60	0	
	(SM) [Fine sand and silt, some gravel, friable, tan, dry]	22.5	SM			60/60	0	
	(SP-SM) [Fine to medium sand and silt, dark brown, saturated, clay lenses]	23.5	SP-SM					

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead





PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-27**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone  
West Virginia  
DRILLING FOREMAN Eric Lindberg  
DRILLING METHOD Direct Push  
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/17/2017  
FINISH 08/17/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))  
NORTHING 322791.408  
EASTING 2425653.206  
VERTICAL DATUM ELEVATION

BOREHOLE DEPTH 25 ft  
BOREHOLE DIAMETER 2 in  
DEPTH TO WATER (INITIAL)  $\nabla$   
DEPTH TO WATER (FINAL)  $\nabla$

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
5	[Topsoil, silt and clay, ditrital, moist]	0.5						SB-27 [(0-0.5ft) (28, 46, 56)]
	(ML) [Silt and clay, some gravel and fine sand, loose, dark brown, moist]		ML			36/60	0	SB-27 [(1.5-2ft) (28, 46, 56)]
							0.1	
							0.2	
		7.5				55/60	0.1	
	(CL-ML) [Silt and sand, dense, some gravel, light brown, moist]						0	
							0.1	SB-27 [(9.5-10ft) (28, 46, 56)]
			CL-ML			55/60	0	
						48/60	0	
20								
		21						
	[Silt and clay, trace gravel, medium plastic, light brown, moist]	21.5						
	(CL-ML) [Silt and clay, trace gravel, medium plastic, light brown, moist (increased moisture and a limestone chunk from 14-14.5 feet)]		CL-ML			60/60	0	SB-27 [(24.5-25ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead

BORING LOG NON-VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-28**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

West Virginia

DRILLING FOREMAN

DRILLING METHOD

Hand Auger

DRILLING EQUIPMENT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/16/2017

FINISH

08/16/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))

NORTHING

322431.681

EASTING

2426012.851

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH

5 ft

BOREHOLE DIAMETER

4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA							
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks				
1	(MLS) [Silt, organic matter, ditrital, some sand and clay, loose, dark brown, dry]	0.75	MLS			60/60	3	SB-28 [(0-0.5ft) (28, 46, 56)]				
	4.8						SB-28 [(0.5-1ft) (28, 46, 56)]					
	3.3						SB-28 [(1-1.5ft) (46, 56)]					
	3.1						SB-28 [(1.5-2ft) (28, 46, 56)]					
2	(CL-ML) [Silt and clay, trace sand, medium plastic, light brown to tan, moist]	3	CL-ML			60/60	0.6					
3	[Silt and limestone, gravel, loose, light brown, moist]							0.7				
										4	0.5	SB-28 [(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead





PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-30**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

West Virginia

DRILLING FOREMAN

DRILLING METHOD

Hand Auger

DRILLING EQUIPMENT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/16/2017

FINISH

08/16/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))

NORTHING

321948.48

EASTING

2426567.555

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH

5 ft

BOREHOLE DIAMETER

4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
1	(ML) [Silt, trace sand, organic roots, ditrital, some clay, dark brown, dry]	0.5	ML				5.3	SB-30 [(0-0.5ft) (28, 46, 56)]
	(CL-ML) [Silt and clay, trace sand, medium plastic, light brown to tan, moist]						2.5	
2							1.3	
							1.5	SB-30 [(1.5-2ft) (28, 46, 56)]
3						60/60	1	
							2.1	
4							0.6	SB-30 [(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-31**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

DRILLING FOREMAN  
DRILLING METHOD Hand Auger  
DRILLING EQUIPMENT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/16/2017  
FINISH 08/16/2017

HORIZONTAL DATUM

NORTHING

EASTING

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH 1 ft

BOREHOLE DIAMETER 4 in

DEPTH TO WATER (INITIAL) ▾

DEPTH TO WATER (FINAL) ▾

SAMPLING DATA

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
	(ML) [Silt, organic material, ditrital, some sand and gravel, dark brown, loose, dry]		ML				0.9	SB-31 [(0-0.5ft) (28, 46, 56)]
	(SM) [Silt, sand and gravel, black, large gravel, possible road base]	0.5	SM				0.3	SB-31 [(0.5-1ft) (28, 46, 56)]
1		1						
2								
3								
4								

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-32**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

DRILLING FOREMAN  
DRILLING METHOD Hand Auger  
DRILLING EQUIPMENT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/16/2017

FINISH

08/16/2017

HORIZONTAL DATUM

NORTHING

EASTING

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH

1 ft

BOREHOLE DIAMETER

4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	(CL-ML) [Silt and clay, trace sand and gravel, ditrital material, loose, tan, moist]	1	CL-ML			12/12	0.8	SB-32 [(0-0.5ft) (28, 46, 56)]
2							1	SB-32 [(0.5-1ft) (28, 46, 56)]
3								
4								

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-33**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

DRILLING FOREMAN  
DRILLING METHOD Hand Auger  
DRILLING EQUIPMENT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/16/2017  
FINISH 08/16/2017

HORIZONTAL DATUM

NORTHING

EASTING

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH 1 ft

BOREHOLE DIAMETER 4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

SAMPLING DATA

DEPTH  
ELEVATION

STRATA DESCRIPTION

DEPTH

USCS

GRAPHIC LOG

SAMPLE TYPE

RECOVERY

PID (ppm)  
10.6 eV Lamp

Observations / Remarks

[Silt and clay, trace sand, ditrital material, loose, tan, moist]

2.1 SB-33 [(0-0.5ft) (28, 46, 56)]

0.9

1

1

2

3

4

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead

BORING LOG NON\_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 10/27/17



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-34**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

DRILLING FOREMAN  
DRILLING METHOD Hand Auger  
DRILLING EQUIPMENT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/16/2017  
FINISH 08/16/2017

HORIZONTAL DATUM

NORTHING

EASTING

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH 1 ft

BOREHOLE DIAMETER 4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

SAMPLING DATA

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
	[Silt and gravel road base]						0.9	[(0-0.5ft) (28, 46, 56)]
		0.5					1.3	[(0.5-1ft) (28, 46, 56)]
1								
2								
3								
4								

REMARKS:

LAB ANALYSIS:  
28 = Pesticides  
46 = Arsenic  
56 = Lead





PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SB-35**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

DRILLING FOREMAN  
DRILLING METHOD Hand Auger  
DRILLING EQUIPMENT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/16/2017  
FINISH 08/16/2017

HORIZONTAL DATUM

NORTHING

EASTING

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH 1 ft

BOREHOLE DIAMETER 4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

SAMPLING DATA

DEPTH  
ELEVATION

STRATA DESCRIPTION

DEPTH

USCS

GRAPHIC LOG

SAMPLE TYPE

RECOVERY

PID (ppm)  
10.6 eV Lamp

Observations / Remarks

[Silt and organic material, loose, trace gravel and sand]

0.5

0.8

[(0-0.5ft) (27)]

REMARKS:

LAB ANALYSIS:  
27 = PCBs



PROJECT:  
Roxul  
NON-VRP Site Characterization

BORING # **SED-1**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

DRILLING FOREMAN  
DRILLING METHOD Hand Auger  
DRILLING EQUIPMENT

ERM REPRESENTATIVE R. Baisden  
OFFICE LOCATION Hurricane, WV  
DATE: START 08/16/2017  
FINISH 08/16/2017

HORIZONTAL DATUM

NORTHING

EASTING

VERTICAL DATUM

ELEVATION

BOREHOLE DEPTH 2 ft

BOREHOLE DIAMETER 4 in

DEPTH TO WATER (INITIAL) ▼

DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Silt and organic matter, loose, some sand and trace gravel, dark brown/black, moist]	1			12/12		0.6	[(0-0.5ft) (28, 46, 56)]
							1.5	[(0.5-1ft) (28, 46, 56)]
2	[Clay and silt, trace sand and gravel, brown to tan, plastic, wet]	2			12/12		1	[(1-1.5ft) (46, 56)]
							1.2	[(1.5-2ft) (46, 56)]
3								
4								

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead

*Appendix C*

*Groundwater Sample Logs*



# GROUNDWATER SAMPLING FORM

Monitoring Well: Packing Shed well

CLIENT: Roxul DATE: 8/15/17  
 LOCATION: Kearneysville WV, Jo site TIME: 1415  
 PROJECT NO: \_\_\_\_\_ COST CODE: \_\_\_\_\_

## Groundwater Elevation Data:

Unable to access well, assuming to be similar

Depth to water from reference point	<u>in depth and water level to Residential well</u>	feet
Depth to bottom of well from reference point		feet
Height of water column (h) in feet.		feet
Reference Point : Top of Casing (TOC), Ground Surface (GS)		

## Well Purging Data:

Volume of Water in Well		gallons
2-inch well (Vol. = 0.162 x h <u>300ft</u> (conservative))		<u>48.6 ft</u>
4-inch well (Vol. = 0.651 x h		
____-inch well (Vol. = 7.48 x 3.14 x r <sup>2</sup> x h, Where r = radius of well).		
Volume of water to be removed (minimum of 3 well volumes).		gallons
Pumping Time: Start: _____ Finish: _____		minutes
Pump Type (model): Bailer; DC Purge Pump, Other		
Volume of water removed		<u>55</u> gallons

## Well Draw Down & Field Water Quality:

Time	Gallons	Temperature (Degrees F)	pH (Std Units)	Conductivity	ORP	Appearance/Odor
1420	10	23.30	6.81	191.9		Clear/None
1425	20	14.50	6.98	122.20		"
1430	30	15.60	6.96	131.4		"
1435	40	15.58	6.89	131.0		"
1440	50	15.57	6.89	130.4		"
Comments: <u>1445 Sample time, Dup-1 collected</u>						



# GROUNDWATER SAMPLING FORM

Monitoring Well: Residential Well

CLIENT: Roxul DATE: 8/15/17  
 LOCATION: Kearneysville; Jo site TIME: 1330  
 PROJECT NO: \_\_\_\_\_ COST CODE: \_\_\_\_\_

## Groundwater Elevation Data:

Depth to water from reference point	<u>54.51</u> feet
Depth to bottom of well from reference point	<u>220.5</u> feet
Height of water column (h) in feet.	<u>165.99</u> feet
Reference Point : Top of Casing (TOC), Ground Surface (GS)	<u>TOC</u>

## Well Purging Data:

<u>Conservative</u> <u>In lines</u>	Volume of Water in Well	gallons
	2-inch well (Vol. = 0.162 x h - <u>line</u> x 300 ft (conservative))	<u>48.6</u> gallons
	4-inch well (Vol. = 0.651 x h)	
	<u>6</u> -inch well (Vol. = 7.48 x 3.14 x r <sup>2</sup> x h, Where r = radius of well).	<u>243.8</u>
<u>In well</u>	Volume of water to be removed ( <del>minimum of 3 well volumes</del> ). <u>Purge 15 min</u>	gallons
	Pumping Time: Start: _____ Finish: _____	minutes
	Pump Type (model): Bailer, DC Purge Pump, Other	
	Volume of water removed	<u>55</u> gallons

## Well Draw Down & Field Water Quality:

Time	Gallons	Temperature (Degrees F)	pH (Std Units)	Conductivity	ORP	Appearance/Odor <u>slight iron color</u>
<u>1345</u>	<u>10</u>	<u>20.00</u>	<u>6.82</u>	<u>136.4</u>		<u>clear/none</u>
<u>1350</u>	<u>20</u>	<u>15.10</u>	<u>6.91</u>	<u>97.20</u>		<u>stained/none</u>
<u>1355</u>	<u>30</u>	<u>16.20</u>	<u>6.92</u>	<u>104.6</u>		<u>stained/none</u>
<u>1400</u>	<u>40</u>	<u>15.90</u>	<u>6.89</u>	<u>99.20</u>		<u>clear/none</u>
<u>1405</u>	<u>50</u>	<u>15.90</u>	<u>6.89</u>	<u>98.40</u>		<u>clear/none</u>
Comments: <u>Sample Time 1410</u>						

## *Appendix D*

### *Analytical Soil and Groundwater Data Reports*



August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:31:36 PM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2254888</b>
Purchase Order:		Workorder ID:	<b>ERM141 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Thursday, August 17, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

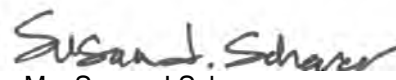
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

  
Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2254888001	SB-32(0-0.5')	Solid	8/16/2017 16:05	8/17/2017 16:44	Collected by Client
2254888002	SB-32(0.5-1.0')	Solid	8/16/2017 16:10	8/29/2017 11:34	Collected by Client
2254888003	SB-33(0-0.5')	Solid	8/16/2017 16:25	8/17/2017 16:44	Collected by Client
2254888004	SB-33(0.5-1.0')	Other	8/16/2017 16:30	8/17/2017 16:44	Collected by Client
2254888005	SB-34(0-0.5')	Solid	8/16/2017 16:35	8/17/2017 16:44	Collected by Client
2254888006	SB-34(0.5-1.0')	Other	8/16/2017 16:40	8/17/2017 16:44	Collected by Client
2254888007	SB-35(0-0.5')	Solid	8/16/2017 17:00	8/17/2017 16:44	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2254888001**Sample ID:** SB-32(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2254888002**Sample ID:** SB-32(0.5-1.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2254888003**Sample ID:** SB-33(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2254888005**Sample ID:** SB-34(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888001**  
Sample ID: **SB-32(0-0.5')**

Date Collected: 8/16/2017 16:05 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
alpha-BHC	36.5		ug/kg	10.5	0.93	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
beta-BHC	93.6		ug/kg	10.5	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
delta-BHC	9.5J	J	ug/kg	10.5	0.80	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
gamma-BHC	27.0		ug/kg	10.5	0.87	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
4,4'-DDD	95600J	J,1	ug/kg	102000	8340	SW846 8081B	8/18/17 02:20 CMA	8/28/17 11:53 RWS	A	
4,4'-DDE	28900		ug/kg	20400	2780	SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:07 RWS	A	
4,4'-DDT	560000		ug/kg	102000	11700	SW846 8081B	8/18/17 02:20 CMA	8/28/17 11:53 RWS	A	
Dieldrin	9130		ug/kg	2040	235	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:11 RWS	A	
Endosulfan I	1990		ug/kg	1050	130	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:11 RWS	A	
Endosulfan II	71.1		ug/kg	20.4	4.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Endosulfan Sulfate	39.6		ug/kg	20.4	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Endrin	2160		ug/kg	2040	148	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:11 RWS	A	
Endrin Aldehyde	20.4 U	U	ug/kg	20.4	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Endrin Ketone	226		ug/kg	20.4	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Heptachlor	13.4		ug/kg	10.5	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Methoxychlor	20.4 U	U	ug/kg	20.4	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Toxaphene	216 U	U	ug/kg	216	35.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	0		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:07 RWS	A	
Decachlorobiphenyls (S)	84.9		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Tetrachloro-m-xylene (S)	60.2		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:34 RWS	A	
Tetrachloro-m-xylene (S)	0		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:07 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	22.2		%	0.1	0.01	S2540G-11		8/18/17 10:44 AXD		
Total Solids	77.8		%	0.1	0.01	S2540G-11		8/18/17 10:44 AXD		
<b>METALS</b>										
Arsenic, Total	14.1		mg/kg	1.8	0.58	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:06 ZMC	A1	
Lead, Total	70.3		mg/kg	1.2	0.39	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:06 ZMC	A1	

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888001**  
Sample ID: **SB-32(0-0.5')**

Date Collected: 8/16/2017 16:05 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888002**  
Sample ID: **SB-32(0.5-1.0')**

Date Collected: 8/16/2017 16:10 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
beta-BHC	22.9		ug/kg	10.2	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
gamma-BHC	4.0J	J	ug/kg	10.2	0.84	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
4,4'-DDD	1310		ug/kg	197	16.2	SW846 8081B	8/29/17 23:50 CMA	8/31/17 11:09	RWS	A
4,4'-DDE	911		ug/kg	197	26.9	SW846 8081B	8/29/17 23:50 CMA	8/31/17 11:09	RWS	A
4,4'-DDT	24800		ug/kg	1970	227	SW846 8081B	8/29/17 23:50 CMA	8/31/17 11:25	RWS	A
Dieldrin	985		ug/kg	197	22.7	SW846 8081B	8/29/17 23:50 CMA	8/31/17 11:09	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Endosulfan II	19.7 U	U	ug/kg	19.7	4.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Endosulfan Sulfate	19.7 U	U	ug/kg	19.7	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Endrin	49.3		ug/kg	19.7	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Endrin Aldehyde	19.7 U	U	ug/kg	19.7	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Endrin Ketone	26.8		ug/kg	19.7	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Methoxychlor	19.7 U	U	ug/kg	19.7	2.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Toxaphene	209 U	U	ug/kg	209	34.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	72.4		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
Decachlorobiphenyls (S)	0		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/31/17 11:25	RWS	A
Tetrachloro-m-xylene (S)	0		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/31/17 11:25	RWS	A
Tetrachloro-m-xylene (S)	75.3		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:45	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	18.1		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	81.9		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	9.7		mg/kg	1.8	0.60	SW846 6020A	8/30/17 02:45 LXC	8/30/17 06:48	ZMC	A1
Lead, Total	26.6		mg/kg	1.2	0.39	SW846 6020A	8/30/17 02:45 LXC	8/30/17 06:48	ZMC	A1

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888002**  
Sample ID: **SB-32(0.5-1.0')**

Date Collected: 8/16/2017 16:10 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888003**  
Sample ID: **SB-33(0-0.5')**

Date Collected: 8/16/2017 16:25 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
alpha-BHC	1.5J	J	ug/kg	10.2	0.90	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
gamma-Chlordane	5.7J	J	ug/kg	10.2	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
4,4'-DDD	381		ug/kg	19.8	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
4,4'-DDE	3830		ug/kg	396	54.0	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:27	RWS	A
4,4'-DDT	2120		ug/kg	396	45.6	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:27	RWS	A
Dieldrin	796		ug/kg	396	45.6	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:27	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Endosulfan II	34.6		ug/kg	19.8	4.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Endosulfan Sulfate	10.9J	J,1	ug/kg	19.8	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Endrin	105		ug/kg	19.8	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Endrin Ketone	37.0		ug/kg	19.8	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Toxaphene	210 U	U	ug/kg	210	34.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	107		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:27	RWS	A
Decachlorobiphenyls (S)	133		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
Tetrachloro-m-xylene (S)	81		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:27	RWS	A
Tetrachloro-m-xylene (S)	74.2		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 16:50	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	17.7		%	0.1	0.01	S2540G-11		8/18/17 10:44	AXD	
Total Solids	82.3		%	0.1	0.01	S2540G-11		8/18/17 10:44	AXD	
<b>METALS</b>										
Arsenic, Total	13.5	2	mg/kg	1.8	0.60	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:13	ZMC	A1
Lead, Total	95.6	3	mg/kg	1.2	0.39	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:13	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888003**  
Sample ID: **SB-33(0-0.5')**

Date Collected: 8/16/2017 16:25 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888005**  
Sample ID: **SB-34(0-0.5')**

Date Collected: 8/16/2017 16:35 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.2 U	U	ug/kg	9.2	3.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
alpha-BHC	9.2 U	U	ug/kg	9.2	0.81	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
beta-BHC	9.2 U	U	ug/kg	9.2	0.97	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
delta-BHC	9.2 U	U	ug/kg	9.2	0.70	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
gamma-BHC	9.2 U	U	ug/kg	9.2	0.76	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
alpha-Chlordane	9.2 U	U	ug/kg	9.2	0.97	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
gamma-Chlordane	9.2 U	U	ug/kg	9.2	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
4,4'-DDD	108	1	ug/kg	89.2	7.3	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:58	RWS	A
4,4'-DDE	500		ug/kg	89.2	12.2	SW846 8081B	8/18/17 02:20 CMA	8/25/17 19:58	RWS	A
4,4'-DDT	6660		ug/kg	892	103	SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:22	RWS	A
Dieldrin	58.2		ug/kg	17.8	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Endosulfan I	9.2 U	U	ug/kg	9.2	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Endosulfan II	17.8 U	U	ug/kg	17.8	3.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Endosulfan Sulfate	17.8 U	U	ug/kg	17.8	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Endrin	40.5		ug/kg	17.8	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Endrin Aldehyde	17.8 U	U	ug/kg	17.8	1.9	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Endrin Ketone	8.4J	J	ug/kg	17.8	2.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Heptachlor	9.2 U	U	ug/kg	9.2	0.92	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Heptachlor Epoxide	9.2 U	U	ug/kg	9.2	0.92	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Methoxychlor	17.8 U	U	ug/kg	17.8	2.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Toxaphene	189 U	U	ug/kg	189	31.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	79.6		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Decachlorobiphenyls (S)	185		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:22	RWS	A
Tetrachloro-m-xylene (S)	71.4		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:38	RWS	A
Tetrachloro-m-xylene (S)	0		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:22	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	12.2		%	0.1	0.01	S2540G-11		8/18/17 10:44	AXD	
Total Solids	87.8		%	0.1	0.01	S2540G-11		8/18/17 10:44	AXD	
<b>METALS</b>										
Arsenic, Total	3.6		mg/kg	1.6	0.54	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:28	ZMC	A1
Lead, Total	10.5		mg/kg	1.1	0.35	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:28	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888005**  
Sample ID: **SB-34(0-0.5')**

Date Collected: 8/16/2017 16:35 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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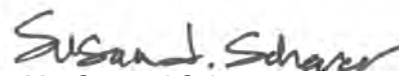
## ANALYTICAL RESULTS

Workorder: 2254888 ERM141|JEFFERSON COUNTY WV

Lab ID: **2254888007**  
Sample ID: **SB-35(0-0.5')**

Date Collected: 8/16/2017 17:00 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PCBs</b>										
Total Polychlorinated Biphenyl	0.092		mg/kg	0.040	0.0036	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1016	0.040 U	U	mg/kg	0.040	0.0072	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1221	0.040 U	U	mg/kg	0.040	0.0036	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1232	0.040 U	U	mg/kg	0.040	0.0072	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1242	0.040 U	U	mg/kg	0.040	0.011	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1248	0.040 U	U	mg/kg	0.040	0.0072	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1254	0.092		mg/kg	0.040	0.0072	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1260	0.040 U	U	mg/kg	0.040	0.0072	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1262	0.040 U	U	mg/kg	0.040	0.0084	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Aroclor-1268	0.040 U	U	mg/kg	0.040	0.011	SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	110		%	49 - 115		SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
Tetrachloro-m-xylene (S)	70.7		%	27 - 137		SW846 8082A	8/21/17 00:45 CMA	8/21/17 14:05	EGO	A
<b>WET CHEMISTRY</b>										
Moisture	17.7		%	0.1	0.01	S2540G-11		8/18/17 10:44	AXD	
Total Solids	82.3		%	0.1	0.01	S2540G-11		8/18/17 10:44	AXD	

  
Ms. Susan J Scherer  
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2254888001</b>	1	SB-32(0-0.5')	SW846 8081B	4,4'-DDD
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 62% in the bracketing CCV. Data for this compound may have been impacted.				
<b>2254888003</b>	1	SB-33(0-0.5')	SW846 8081B	Endosulfan Sulfate
The detection of this compound was confirmed on an alternate analytical column. The difference between the primary column and confirmation column was greater than 40% RPD.				
<b>2254888003</b>	2	SB-33(0-0.5')	SW846 6020A	Arsenic, Total
One of the two matrix spike analyses performed on this sample failed to meet acceptable recovery limits. The other matrix spike was within acceptable recovery limits. Matrix interferences are the possible cause for the failure.				
<b>2254888003</b>	3	SB-33(0-0.5')	SW846 6020A	Lead, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. The sample was post-digestion spiked, and this matrix spike was within acceptable recovery limits.				
<b>2254888005</b>	1	SB-34(0-0.5')	SW846 8081B	4,4'-DDD
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased low 28% in the bracketing CCV. Data for this compound may have been impacted.				

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## Steven Smith

**From:** Susan Scherer  
**Sent:** Thursday, August 17, 2017 4:58 PM  
**To:** ALMDT.SampleReceiving  
**Cc:** ALMDT.Reporting; Paul Painter; ALMDT.Prepare; ALMDT.SVGC; ALMDT.VOMS;  
ALMDT.Metals; ALMDT.WChemTECHS; ALMDT.SVMS  
**Subject:** ERM, WV-Jefferson County Project-Incoming, 8/17

Hello,

Please expect samples to arrive from ERM's Jefferson County WV project starting this evening with the ALS courier. There is also a pickup scheduled for tomorrow, Friday, 8/18 and there will be a few more next week too.

Over the duration of the project, please expect the following:

80 soils for pesticides, arsenic, and lead by 6020  
120 soils submitted on HOLD, pending the results of the above **\*\*Important\*\*** log in using line item #4  
2 soils for PCBs  
5 soils for 8260 BTEX-LO, PAH, Arsenic, Lead by 6020, PESTICIDES, TPHGRO, TPHDRO/ORO **\*\*Important\*\*** will receive 2 Terra core kits per site; 1-BTEX; 1-TPHGRO  
5 soils TOTAL METALS 6020/7471 (Mn, Ni, Cu, V, Hg, Cd, Cr, Ba)  
5 soils Formaldehyde **\*\*Important\*\*** the client was notified we do not hold WV certification for method 8015  
3 groundwaters for 8260 TCL VOCS AND PESTICIDES  
3-6 Rinsate Blanks: Pesticides, Pb, As by 6020, 8260 BTEX, TPHGRO, TPHDRO/ORO, PAH, PAH SIM  
2 Trip Blanks for 8260 TCL VOCs

All samples require 7 day TAT so the client has time to make decisions about the samples on hold within the 14 day extraction holding time for pesticides. Level IV deliverables are required.

If you have any questions or concerns about this, please ask.





LOG IN: USE 592919

Regards,

Susan Scherer  
Project Manager, Environmental  
Middletown, Pennsylvania, USA



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August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:31:47 PM - See workorder comment section for explanation

Project Name: **2017-JEFFERSON COUNTY**

Workorder: **2254890**

Purchase Order:

Workorder ID: **ERM142|JEFFERSON COUNTY WV**

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Thursday, August 17, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2254890001	SB-23(0-0.5')	Solid	8/16/2017 14:55	8/17/2017 16:44	Collected by Client
2254890002	SB-23(0.5-1.0')	Other	8/16/2017 15:00	8/17/2017 16:44	Collected by Client
2254890003	SB-23(1.0-1.5')	Other	8/16/2017 15:05	8/17/2017 16:44	Collected by Client
2254890004	SB-23(1.5-2.0')	Solid	8/16/2017 15:10	8/17/2017 16:44	Collected by Client
2254890005	SB-23(4.5-5.0')	Solid	8/16/2017 15:20	8/29/2017 11:34	Collected by Client
2254890006	SB-31(0-0.5')	Solid	8/16/2017 15:40	8/17/2017 16:44	Collected by Client
2254890007	SB-31(0.5-1.0')	Solid	8/16/2017 15:45	8/17/2017 16:44	Collected by Client
2254890008	DUP-3	Solid	8/16/2017 07:30	8/17/2017 16:44	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

<b>Lab ID:</b> 2254890001	<b>Sample ID:</b> SB-23(0-0.5')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254890004	<b>Sample ID:</b> SB-23(1.5-2.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254890005	<b>Sample ID:</b> SB-23(4.5-5.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254890006	<b>Sample ID:</b> SB-31(0-0.5')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254890007	<b>Sample ID:</b> SB-31(0.5-1.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254890008	<b>Sample ID:</b> DUP-3	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890001**  
Sample ID: **SB-23(0-0.5')**

Date Collected: 8/16/2017 14:55 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
4,4'-DDD	19.5 U	U	ug/kg	19.5	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
4,4'-DDE	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
4,4'-DDT	19.5 U	U	ug/kg	19.5	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	85.4		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
Tetrachloro-m-xylene (S)	66.8		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 17:53	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	19.3		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	80.7		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	6.4		mg/kg	1.7	0.56	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:32	ZMC	A1
Lead, Total	45.3		mg/kg	1.1	0.37	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:32	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890001**  
Sample ID: **SB-23(0-0.5')**

Date Collected: 8/16/2017 14:55 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890004**  
Sample ID: **SB-23(1.5-2.0')**

Date Collected: 8/16/2017 15:10 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
alpha-BHC	9.8 U	U	ug/kg	9.8	0.87	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
gamma-BHC	9.8 U	U	ug/kg	9.8	0.81	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
4,4'-DDD	19.1 U	U	ug/kg	19.1	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
4,4'-DDE	19.1 U	U	ug/kg	19.1	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
4,4'-DDT	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Dieldrin	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Endrin	19.1 U	U	ug/kg	19.1	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Methoxychlor	19.1 U	U	ug/kg	19.1	2.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Toxaphene	202 U	U	ug/kg	202	33.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	95.7		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
Tetrachloro-m-xylene (S)	73.3		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:09	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	16.4		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	83.6		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	6.2		mg/kg	1.7	0.56	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:36	ZMC	A1
Lead, Total	14.4		mg/kg	1.1	0.37	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:36	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890004**  
Sample ID: **SB-23(1.5-2.0')**

Date Collected: 8/16/2017 15:10 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890005**  
Sample ID: **SB-23(4.5-5.0')**

Date Collected: 8/16/2017 15:20 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
4,4'-DDD	19.9 U	U	ug/kg	19.9	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
4,4'-DDE	19.9 U	U	ug/kg	19.9	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
4,4'-DDT	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Dieldrin	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Endosulfan II	19.9 U	U	ug/kg	19.9	4.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Endosulfan Sulfate	19.9 U	U	ug/kg	19.9	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Endrin	19.9 U	U	ug/kg	19.9	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Endrin Aldehyde	19.9 U	U	ug/kg	19.9	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Endrin Ketone	19.9 U	U	ug/kg	19.9	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Methoxychlor	19.9 U	U	ug/kg	19.9	2.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Toxaphene	211 U	U	ug/kg	211	34.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.2		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
Tetrachloro-m-xylene (S)	76.9		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:29	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	21.1		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	78.9		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	10.2		mg/kg	1.8	0.61	SW846 6020A	8/30/17 02:45 LXC	8/30/17 06:55	ZMC	A1
Lead, Total	15.9		mg/kg	1.2	0.40	SW846 6020A	8/30/17 02:45 LXC	8/30/17 06:55	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890005**  
Sample ID: **SB-23(4.5-5.0')**

Date Collected: 8/16/2017 15:20 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890006**  
Sample ID: **SB-31(0-0.5')**

Date Collected: 8/16/2017 15:40 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>WET CHEMISTRY</b>										
Moisture	23.2		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	76.8		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	33.3		mg/kg	1.9	0.64	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:51	ZMC	A1
Lead, Total	73.2		mg/kg	1.3	0.42	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:51	ZMC	A1
alpha-BHC	10.6 U	U	ug/kg	10.6	0.94	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
beta-BHC	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
delta-BHC	10.6 U	U	ug/kg	10.6	0.81	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
gamma-BHC	10.6 U	U	ug/kg	10.6	0.88	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Heptachlor	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Aldrin	10.6 U	U	ug/kg	10.6	3.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Heptachlor Epoxide	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Endosulfan I	5400	1	ug/kg	1060	131	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
Dieldrin	18800		ug/kg	2070	238	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
4,4'-DDE	24000		ug/kg	2070	282	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
Endrin	2070 U	U	ug/kg	2070	150	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
Endosulfan II	9070	2	ug/kg	2070	432	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
4,4'-DDD	51600000 U	U,3	ug/kg	516000	422000	SW846 8081B	8/18/17 02:20 CMA	8/28/17 12:17	RWS	A
Endosulfan Sulfate	2330		ug/kg	2070	138	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
4,4'-DDT	51600000 U	U	ug/kg	516000	594000	SW846 8081B	8/18/17 02:20 CMA	8/28/17 12:17	RWS	A
Methoxychlor	20.7 U	U	ug/kg	20.7	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Endrin Ketone	1210J	J	ug/kg	2070	288	SW846 8081B	8/18/17 02:20 CMA	8/25/17 20:30	RWS	A
Endrin Aldehyde	20.7 U	U	ug/kg	20.7	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
alpha-Chlordane	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
gamma-Chlordane	10.6 U	U	ug/kg	10.6	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Toxaphene	219 U	U	ug/kg	219	36.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	77.5		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Decachlorobiphenyls (S)	0		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:38	RWS	A
Tetrachloro-m-xylene (S)	97.6		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:25	RWS	A
Tetrachloro-m-xylene (S)	0		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:38	RWS	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890006**  
Sample ID: **SB-31(0-0.5')**

Date Collected: 8/16/2017 15:40 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890007**  
Sample ID: **SB-31(0.5-1.0')**

Date Collected: 8/16/2017 15:45 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.4 U	U	ug/kg	10.4	3.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
alpha-BHC	10.4 U	U	ug/kg	10.4	0.92	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
beta-BHC	25.6	1	ug/kg	10.4	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
delta-BHC	10.4 U	U	ug/kg	10.4	0.80	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
gamma-BHC	4.8J	J	ug/kg	10.4	0.86	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
alpha-Chlordane	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
gamma-Chlordane	10.4 U	U	ug/kg	10.4	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
4,4'-DDD	72400	2	ug/kg	20200	1660	SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:54	RWS	A
4,4'-DDE	12600		ug/kg	2020	276	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:01	RWS	A
4,4'-DDT	209000		ug/kg	101000	11700	SW846 8081B	8/18/17 02:20 CMA	8/28/17 12:33	RWS	A
Dieldrin	11300		ug/kg	2020	233	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:01	RWS	A
Endosulfan I	3060		ug/kg	1040	129	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:01	RWS	A
Endosulfan II	4370		ug/kg	2020	423	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:01	RWS	A
Endosulfan Sulfate	2230		ug/kg	2020	135	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:01	RWS	A
Endrin	2020 U	U	ug/kg	2020	147	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:01	RWS	A
Endrin Aldehyde	20.2 U	U	ug/kg	20.2	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Endrin Ketone	395		ug/kg	20.2	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Heptachlor	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Heptachlor Epoxide	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Methoxychlor	20.2 U	U	ug/kg	20.2	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Toxaphene	215 U	U	ug/kg	215	35.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	0		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:54	RWS	A
Decachlorobiphenyls (S)	93.2		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Tetrachloro-m-xylene (S)	70.2		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:41	RWS	A
Tetrachloro-m-xylene (S)	0		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/28/17 04:54	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	19.6		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	80.4		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	24.2		mg/kg	1.7	0.58	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:54	ZMC	A1
Lead, Total	49.8		mg/kg	1.2	0.38	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:54	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890007**  
Sample ID: **SB-31(0.5-1.0')**

Date Collected: 8/16/2017 15:45 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890008**  
Sample ID: **DUP-3**

Date Collected: 8/16/2017 07:30 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.4 U	U	ug/kg	10.4	3.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
alpha-BHC	10.4 U	U	ug/kg	10.4	0.92	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
beta-BHC	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
delta-BHC	10.4 U	U	ug/kg	10.4	0.80	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
gamma-BHC	3.2J	J	ug/kg	10.4	0.86	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
alpha-Chlordane	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
gamma-Chlordane	10.4 U	U	ug/kg	10.4	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
4,4'-DDD	17400	1	ug/kg	2020	165	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
4,4'-DDE	15400		ug/kg	2020	276	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
4,4'-DDT	10100000 U	U	ug/kg	10100000	1160000	SW846 8081B	8/18/17 02:20 CMA	8/28/17 05:10	RWS	A
Dieldrin	13200		ug/kg	2020	233	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
Endosulfan I	3410		ug/kg	1040	129	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
Endosulfan II	6930		ug/kg	2020	423	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
Endosulfan Sulfate	2650		ug/kg	2020	135	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
Endrin	2020 U	U	ug/kg	2020	147	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:33	RWS	A
Endrin Aldehyde	20.2 U	U	ug/kg	20.2	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Endrin Ketone	404		ug/kg	20.2	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Heptachlor	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Heptachlor Epoxide	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Methoxychlor	20.2 U	U	ug/kg	20.2	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Toxaphene	214 U	U	ug/kg	214	35.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	0		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/28/17 05:10	RWS	A
Decachlorobiphenyls (S)	92		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Tetrachloro-m-xylene (S)	69.9		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 18:56	RWS	A
Tetrachloro-m-xylene (S)	0		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/28/17 05:10	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	19.4		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	80.6		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	31.9		mg/kg	1.8	0.61	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:58	ZMC	A1
Lead, Total	53.8		mg/kg	1.2	0.40	SW846 6020A	8/21/17 02:20 LXC	8/22/17 07:58	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254890 ERM142|JEFFERSON COUNTY WV

Lab ID: **2254890008**

Date Collected: 8/16/2017 07:30

Matrix: Solid

Sample ID: **DUP-3**

Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2254890006</b>	1	SB-31(0-0.5')	SW846 8081B	Endosulfan I
The detection of this compound was confirmed on an alternate analytical column. The difference between the primary column and confirmation column was greater than 40% RPD.				
<b>2254890006</b>	2	SB-31(0-0.5')	SW846 8081B	Endosulfan II
The detection of this compound was confirmed on an alternate analytical column. The difference between the primary column and confirmation column was greater than 40% RPD.				
<b>2254890006</b>	3	SB-31(0-0.5')	SW846 8081B	4,4'-DDD
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 62% in the bracketing CCV. Data for this compound may have been impacted.				
<b>2254890007</b>	1	SB-31(0.5-1.0')	SW846 8081B	beta-BHC
The detection of this compound was confirmed on an alternate analytical column. The difference between the primary column and confirmation column was greater than 40% RPD.				
<b>2254890007</b>	2	SB-31(0.5-1.0')	SW846 8081B	4,4'-DDD
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 62% in the bracketing CCV. Data for this compound may have been impacted.				
<b>2254890008</b>	1	DUP-3	SW846 8081B	4,4'-DDD
Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased low 28% in the bracketing CCV. Data for this compound may have been impacted.				

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August 28, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Project Name: **2017-JEFFERSON COUNTY**

Workorder: **2254891**

Purchase Order:

Workorder ID: **ERM143|JEFFERSON COUNTY WV**

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 17, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2254891001	SED-1(0-0.5')	Solid	8/16/2017 08:40	8/17/2017 16:44	Collected by Client
2254891002	DUP-2	Solid	8/16/2017 07:00	8/17/2017 16:44	Collected by Client
2254891003	SED-1(0.5-1.0')	Other	8/16/2017 08:45	8/17/2017 16:44	Collected by Client
2254891004	SED-1(1.0-1.5')	Other	8/16/2017 08:50	8/17/2017 16:44	Collected by Client
2254891005	SED-1(1.5-2.0')	Solid	8/16/2017 08:55	8/17/2017 16:44	Collected by Client
2254891006	SB-30(0-0.5')	Solid	8/16/2017 13:40	8/17/2017 16:44	Collected by Client
2254891007	SB-30(0.5-1.0')	Other	8/16/2017 13:45	8/17/2017 16:44	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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**PROJECT SUMMARY**

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

**Sample Comments****Lab ID:** 2254891001**Sample ID:** SED-1(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2254891002**Sample ID:** DUP-2**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2254891005**Sample ID:** SED-1(1.5-2.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2254891006**Sample ID:** SB-30(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891001**  
Sample ID: **SED-1(0-0.5')**

Date Collected: 8/16/2017 08:40 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	20.3 U	U	ug/kg	20.3	6.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
alpha-BHC	20.3 U	U	ug/kg	20.3	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
beta-BHC	20.3 U	U	ug/kg	20.3	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
delta-BHC	20.3 U	U	ug/kg	20.3	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
gamma-BHC	20.3 U	U	ug/kg	20.3	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
alpha-Chlordane	20.3 U	U	ug/kg	20.3	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
gamma-Chlordane	17.6J	J	ug/kg	20.3	3.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
4,4'-DDD	294		ug/kg	39.5	3.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
4,4'-DDE	613		ug/kg	39.5	5.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
4,4'-DDT	477		ug/kg	39.5	4.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Dieldrin	39.4J	J,1	ug/kg	39.5	4.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Endosulfan I	20.3 U	U	ug/kg	20.3	2.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Endosulfan II	39.5 U	U	ug/kg	39.5	8.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Endosulfan Sulfate	39.5 U	U	ug/kg	39.5	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Endrin	22.2J	J	ug/kg	39.5	2.9	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Endrin Aldehyde	39.5 U	U	ug/kg	39.5	4.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Endrin Ketone	7.7J	J	ug/kg	39.5	5.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Heptachlor	20.3 U	U	ug/kg	20.3	2.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Heptachlor Epoxide	20.3 U	U	ug/kg	20.3	2.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Methoxychlor	39.5 U	U	ug/kg	39.5	5.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Toxaphene	418 U	U	ug/kg	418	69.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	97.4		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
Tetrachloro-m-xylene (S)	61.1		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:12	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	60.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	40.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	11.8		mg/kg	3.4	1.1	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:02	ZMC	A1
Lead, Total	172		mg/kg	2.3	0.75	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:02	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891001**  
Sample ID: **SED-1(0-0.5')**

Date Collected: 8/16/2017 08:40 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891002**  
Sample ID: **DUP-2**

Date Collected: 8/16/2017 07:00 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	20.6 U	U	ug/kg	20.6	6.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
alpha-BHC	20.6 U	U	ug/kg	20.6	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
beta-BHC	20.6 U	U	ug/kg	20.6	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
delta-BHC	20.6 U	U	ug/kg	20.6	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
gamma-BHC	20.6 U	U	ug/kg	20.6	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
alpha-Chlordane	20.6 U	U	ug/kg	20.6	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
gamma-Chlordane	15.3J	J	ug/kg	20.6	3.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
4,4'-DDD	188		ug/kg	40.0	3.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
4,4'-DDE	601		ug/kg	40.0	5.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
4,4'-DDT	183		ug/kg	40.0	4.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Dieldrin	33.7J	J,1	ug/kg	40.0	4.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Endosulfan I	20.6 U	U	ug/kg	20.6	2.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Endosulfan II	40.0 U	U	ug/kg	40.0	8.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Endosulfan Sulfate	40.0 U	U	ug/kg	40.0	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Endrin	18.6J	J	ug/kg	40.0	2.9	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Endrin Aldehyde	40.0 U	U	ug/kg	40.0	4.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Endrin Ketone	40.0 U	U	ug/kg	40.0	5.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Heptachlor	20.6 U	U	ug/kg	20.6	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Heptachlor Epoxide	20.6 U	U	ug/kg	20.6	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Methoxychlor	40.0 U	U	ug/kg	40.0	5.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Toxaphene	425 U	U	ug/kg	425	70.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	70.4		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
Tetrachloro-m-xylene (S)	59.6		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:28	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	59.6		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	40.4		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	9.6		mg/kg	3.6	1.2	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:06	ZMC	A1
Lead, Total	130		mg/kg	2.4	0.79	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:06	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891002**  
Sample ID: **DUP-2**

Date Collected: 8/16/2017 07:00 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
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## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891005**  
Sample ID: **SED-1(1.5-2.0')**

Date Collected: 8/16/2017 08:55 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.5 U	U	ug/kg	11.5	3.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
alpha-BHC	11.5 U	U	ug/kg	11.5	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
beta-BHC	11.5 U	U	ug/kg	11.5	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
delta-BHC	11.5 U	U	ug/kg	11.5	0.88	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
gamma-BHC	11.5 U	U	ug/kg	11.5	0.94	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
alpha-Chlordane	11.5 U	U	ug/kg	11.5	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
gamma-Chlordane	11.5 U	U	ug/kg	11.5	2.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
4,4'-DDD	26.3		ug/kg	22.3	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
4,4'-DDE	6.8J	J	ug/kg	22.3	3.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
4,4'-DDT	19.6J	J	ug/kg	22.3	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Dieldrin	22.3 U	U	ug/kg	22.3	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Endosulfan I	11.5 U	U	ug/kg	11.5	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Endosulfan II	22.3 U	U	ug/kg	22.3	4.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Endosulfan Sulfate	22.3 U	U	ug/kg	22.3	1.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Endrin	22.3 U	U	ug/kg	22.3	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Endrin Aldehyde	22.3 U	U	ug/kg	22.3	2.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Endrin Ketone	22.3 U	U	ug/kg	22.3	3.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Heptachlor	11.5 U	U	ug/kg	11.5	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Heptachlor Epoxide	11.5 U	U	ug/kg	11.5	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Methoxychlor	22.3 U	U	ug/kg	22.3	3.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Toxaphene	236 U	U	ug/kg	236	39.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	92.2		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
Tetrachloro-m-xylene (S)	107		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 19:44	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	26.4		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	73.6		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	10.5		mg/kg	2.0	0.67	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:09	ZMC	A1
Lead, Total	15.0		mg/kg	1.3	0.44	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:09	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891005**  
Sample ID: **SED-1(1.5-2.0')**

Date Collected: 8/16/2017 08:55 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891006**  
Sample ID: **SB-30(0-0.5')**

Date Collected: 8/16/2017 13:40 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
alpha-BHC	3.1J	J	ug/kg	10.2	0.90	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
beta-BHC	2.2J	J	ug/kg	10.2	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
gamma-BHC	1.9J	J	ug/kg	10.2	0.84	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
4,4'-DDD	45.0		ug/kg	19.8	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
4,4'-DDE	726		ug/kg	496	67.6	SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:48	RWS	A
4,4'-DDT	197		ug/kg	19.8	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Dieldrin	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Endosulfan II	19.8 U	U	ug/kg	19.8	4.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Endosulfan Sulfate	19.8 U	U	ug/kg	19.8	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Endrin	19.8 U	U	ug/kg	19.8	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Endrin Ketone	19.8 U	U	ug/kg	19.8	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Toxaphene	210 U	U	ug/kg	210	34.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.1		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:48	RWS	A
Decachlorobiphenyls (S)	84.5		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
Tetrachloro-m-xylene (S)	76.1		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/25/17 21:48	RWS	A
Tetrachloro-m-xylene (S)	68.7		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:00	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	20.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	80.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	7.9		mg/kg	1.7	0.57	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:13	ZMC	A1
Lead, Total	19.2		mg/kg	1.1	0.37	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:13	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254891 ERM143|JEFFERSON COUNTY WV

Lab ID: **2254891006**  
Sample ID: **SB-30(0-0.5')**

Date Collected: 8/16/2017 13:40 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2254891001</b>	1	SED-1(0-0.5')	SW846 8081B	Dieldrin

The detection of this compound was confirmed on an alternate analytical column. The difference between the primary column and confirmation column was greater than 40% RPD.

<b>2254891002</b>	1	DUP-2	SW846 8081B	Dieldrin
-------------------	---	-------	-------------	----------

The detection of this compound was confirmed on an alternate analytical column. The difference between the primary column and confirmation column was greater than 40% RPD.

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34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 1  
Courier: guyana  
Tracking #: 2254891\*

Co. Name: ELM

Contact (Report to): DAVID CONNELLY

Phone:

Address: 204 CHASE DRIVE

HUAC CANYE, WV 25526

Bill to (if different than Report to):

PO#:

Project Name#:

ALS Quote #:

☒ Normal-Standard TAT is 10-12 business days.

Date Required:

☐ Rush-Subject to ALS approval and surcharges.

Approved By:

Email? ☒

Fax? ☐

Y No:

Sample Description/Location  
(as it will appear on the lab report)

COC Comments

Sample Date

Military Time

\*\*Matrix

Enter Number of Containers Per Analysis

1 SED-1 (0.0-0.5')

8/16/17 0840

G S

60204

Pesticides - 80814

Asbestos and LEAD

2 DVP-7

8/16/17 0700

G

6

3 SED-1 (0.5-1.0')

8/16/17 0845

G

6

4 ~~SED-1 (0.0-0.5')~~

8/16/17 0850

G

6

5 SED-1 (1.0-1.5')

8/16/17 0855

G

6

6 SED-1 (1.5-2.0')

8/16/17 1340

G

6

7 SB-30 (0.0-0.5')

8/16/17 1345

G

6

8 SB-30 (0.5-1.0')

8/16/17 1345

G

6

SAMPLED BY (Please Print): Ryan Beischen

Project Comments:

8/16/17 0033

Relinquished By / Company Name

Date

Time

Received By / Company Name

Date

Time

1 Ryan Beischen

8/17/17

0810

2

8/15

810

3 ALS Lab

8/17

1644

4

gm. ALS

5

6

7

8

9

10

ANALYSES/METHOD REQUESTED

Container Type: G G  
Container Size: 8oz 8oz  
Preservative: - -

Therm ID: 309  
Cooler Temp: 6  
No. of Coolers: 1  
Notes:

Correct containers? Y  
Correct sample volume? Y  
Correct preservation? Y  
Headspace/Volatiles? Y  
Container in good condition? Y

ALS FIELD SERVICES  
Setup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other ☐

SLIMA  
Form 7-c  
yes ☐ no ☐  
CLP-like ☐ yes ☐ no ☐  
NJ-Reduced ☐ yes ☐ no ☐  
NJ-Full ☐ yes ☐ no ☐  
If yes, format type: Other

EDS ☐ Required? ☐

DOD Criteria Required? ☐

Container Revision No. 0033

Legend: AL=Air, DW=Drinking Water, GW=Groundwater, OL=Oil, DL=Other Liquid, SL=Sludge, SD=Soil, WP=Wipe, WW=Wastewater  
Container Type: AG=Amber Glass, CG=Clear Glass, PL=Plastic, Preservative: HCl, HNO3, NaOH, etc.  
Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY



October 19, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 10/19/2017 8:43:18 AM - See workorder comment section for explanation

**Project Name: 2017-JEFFERSON COUNTY  
KEANEYSVILLE WV****Workorder: 2254892****Purchase Order:****Workorder ID: ERM144|JEFFERSON COUNTY WV**

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Thursday, August 17, 2017 and Wednesday, October 4, 2017.

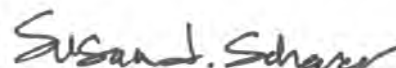
The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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Ms. Susan J Scherer  
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

October 19, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 10/19/2017 8:43:18 AM - See workorder comment section for explanation

Project Name: **2017-JEFFERSON COUNTY  
KEANEYSVILLE WV**

Workorder: **2254892**

Purchase Order:

Workorder ID: **ERM144|JEFFERSON COUNTY WV**

Dear Mr. Connelly:

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

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must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2254892001	SB-30(1.0-1.5')	Other	8/16/2017 13:50	8/17/2017 16:44	Collected by Client
2254892002	SB-30(1.5-2.0')	Solid	8/16/2017 13:55	8/17/2017 16:44	Collected by Client
2254892003	SB-30(4.5-5.0')	Solid	8/16/2017 14:00	8/29/2017 11:34	Collected by Client
2254892004	SB-28(0.0-0.5')	Solid	8/16/2017 14:15	10/4/2017 15:40	Collected by Client
2254892005	SB-28(0.5-1.0')	Solid	8/16/2017 14:20	8/29/2017 11:34	Collected by Client
2254892006	SB-28(1.0-1.5')	Solid	8/16/2017 14:25	8/29/2017 11:34	Collected by Client
2254892007	SB-28(1.5-2.0')	Solid	8/16/2017 14:30	8/17/2017 16:44	Collected by Client
2254892008	SB-28(4.5-5.0')	Solid	8/16/2017 14:40	8/29/2017 11:34	Collected by Client
2254892009	SB-24(0.0-0.5')	Solid	8/16/2017 17:15	8/17/2017 16:44	Collected by Client
2254892010	SB-24(0.5-1.0')	Other	8/16/2017 17:20	8/17/2017 16:44	Collected by Client
2254892011	SB-24(1.0-1.5')	Other	8/16/2017 17:25	8/17/2017 16:44	Collected by Client
2254892012	SB-24(1.5-2.0')	Solid	8/16/2017 17:30	8/17/2017 16:44	Collected by Client
2254892013	SB-24(4.5-5.0')	Solid	8/16/2017 17:40	8/29/2017 11:34	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

This certificate of analysis was modified based on the email request from the client 09/01/17. SJS 09/02/17

For Sample SB-28 (0-0.5') associated with work order 2254892, would you mind having the lab verify the reported result for lead? The concentration listed in the report is 2,250 mg/kg, which is very high. It may be correct, it's just that the lead concentration in the SB-28 (0.5-1') interval was only 27.6 mg/kg. Thank you.

This certificate of analysis was modified based on the email request from Dave Connelly requirings that TCLP lead be run on lab samlpe SB-28 (0-0.5'). SB 09/11/17

This certificate of analysis was modified based on the email request from Dave Connelly on 10/04/17. SJS 10/06/17

If possible, we'd like to run two additional total lead analyses on sample SB-28 (0-0.5').

### Sample Comments

<b>Lab ID:</b> 2254892002	<b>Sample ID:</b> SB-30(1.5-2.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254892003	<b>Sample ID:</b> SB-30(4.5-5.0')	<b>Sample Type:</b> SAMPLE
SAMPLE-SVGC-8081C		
<b>Lab ID:</b> 2254892004	<b>Sample ID:</b> SB-28(0-0.5')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254892007	<b>Sample ID:</b> SB-28(1.5-2.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254892008	<b>Sample ID:</b> SB-28(4.5-5.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254892009	<b>Sample ID:</b> SB-24(0-0.5')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254892012	<b>Sample ID:</b> SB-24(1.5-2.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
<b>Lab ID:</b> 2254892013	<b>Sample ID:</b> SB-24(4.5-5.0')	<b>Sample Type:</b> SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892002**  
Sample ID: **SB-30(1.5-2.0')**

Date Collected: 8/16/2017 13:55 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
4,4'-DDD	2.1J	J	ug/kg	19.5	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
4,4'-DDE	21.5		ug/kg	19.5	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
4,4'-DDT	11.0J	J	ug/kg	19.5	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	73		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
Tetrachloro-m-xylene (S)	63.5		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:15	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	17.2		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	82.8		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	9.1		mg/kg	1.6	0.53	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:17	ZMC	A1
Lead, Total	18.9		mg/kg	1.1	0.35	SW846 6020A	8/21/17 02:20 LXC	8/22/17 08:17	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892002**  
Sample ID: **SB-30(1.5-2.0')**

Date Collected: 8/16/2017 13:55 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892003**  
Sample ID: **SB-30(4.5-5.0')**

Date Collected: 8/16/2017 14:00 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.7 U	U	ug/kg	10.7	3.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
alpha-BHC	10.7 U	U	ug/kg	10.7	0.95	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
beta-BHC	10.7 U	U	ug/kg	10.7	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
delta-BHC	10.7 U	U	ug/kg	10.7	0.82	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
gamma-BHC	10.7 U	U	ug/kg	10.7	0.88	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
alpha-Chlordane	10.7 U	U	ug/kg	10.7	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
gamma-Chlordane	10.7 U	U	ug/kg	10.7	1.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
4,4'-DDD	20.8 U	U	ug/kg	20.8	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
4,4'-DDE	20.8 U	U	ug/kg	20.8	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
4,4'-DDT	20.8 U	U	ug/kg	20.8	2.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Dieldrin	20.8 U	U	ug/kg	20.8	2.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Endosulfan I	10.7 U	U	ug/kg	10.7	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Endosulfan II	20.8 U	U	ug/kg	20.8	4.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Endosulfan Sulfate	20.8 U	U	ug/kg	20.8	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Endrin	20.8 U	U	ug/kg	20.8	1.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Endrin Aldehyde	20.8 U	U	ug/kg	20.8	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Endrin Ketone	20.8 U	U	ug/kg	20.8	2.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Heptachlor	10.7 U	U	ug/kg	10.7	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Heptachlor Epoxide	10.7 U	U	ug/kg	10.7	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Methoxychlor	20.8 U	U	ug/kg	20.8	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Toxaphene	221 U	U	ug/kg	221	36.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	73.1		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
Tetrachloro-m-xylene (S)	73.5		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 17:57	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	22.9		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	77.1		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	10.9		mg/kg	1.9	0.65	SW846 6020A	8/30/17 02:45 LXC	8/30/17 06:59	ZMC	A1
Lead, Total	16.0		mg/kg	1.3	0.43	SW846 6020A	8/30/17 02:45 LXC	8/30/17 06:59	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892003**  
Sample ID: **SB-30(4.5-5.0')**

Date Collected: 8/16/2017 14:00 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892004**  
Sample ID: **SB-28(0-0.5')**

Date Collected: 8/16/2017 14:15 Matrix: Solid  
Date Received: 10/4/2017 15:40

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.6 U	U	ug/kg	10.6	3.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
alpha-BHC	10.6 U	U	ug/kg	10.6	0.94	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
beta-BHC	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
delta-BHC	10.6 U	U	ug/kg	10.6	0.81	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
gamma-BHC	10.6 U	U	ug/kg	10.6	0.87	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
alpha-Chlordane	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
gamma-Chlordane	10.6 U	U	ug/kg	10.6	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
4,4'-DDD	15.2J	J	ug/kg	20.6	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
4,4'-DDE	185		ug/kg	20.6	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
4,4'-DDT	53.8		ug/kg	20.6	2.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Dieldrin	20.6 U	U	ug/kg	20.6	2.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Endosulfan I	10.6 U	U	ug/kg	10.6	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Endosulfan II	20.6 U	U	ug/kg	20.6	4.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Endosulfan Sulfate	20.6 U	U	ug/kg	20.6	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Endrin	20.6 U	U	ug/kg	20.6	1.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Endrin Aldehyde	20.6 U	U	ug/kg	20.6	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Endrin Ketone	20.6 U	U	ug/kg	20.6	2.9	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Heptachlor	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Heptachlor Epoxide	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Methoxychlor	20.6 U	U	ug/kg	20.6	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Toxaphene	219 U	U	ug/kg	219	36.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	67.3		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
Tetrachloro-m-xylene (S)	58.8		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:31	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	22.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	78.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	10.3		mg/kg	1.9	0.63	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:21	ZMC	A1
Lead, Total	2250		mg/kg	1.3	0.41	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:21	ZMC	A1
Lead, Total	57.8		mg/kg	1.2	0.39	SW846 6020A	9/5/17 01:30 LXC	9/5/17 05:50	ZMC	A2
Lead, Total	32.4		mg/kg	1.3	0.42	SW846 6020A	10/6/17 01:00 LXC	10/11/17 14:29	JTP	A4
Lead, Total	28.8		mg/kg	1.3	0.42	SW846 6020A	10/6/17 01:00 LXC	10/11/17 14:33	JTP	A4
<b>TCLP METALS</b>										
Lead, Total	0.016J	J	mg/L	0.033	0.011	SW846 6010C	9/29/17 04:10 LXC	9/29/17 09:46	MNP	A3

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892004**  
Sample ID: **SB-28(0-0.5')**

Date Collected: 8/16/2017 14:15 Matrix: Solid  
Date Received: 10/4/2017 15:40

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

### ALS Environmental Laboratory Locations Across North America

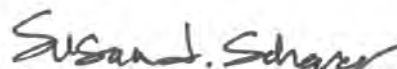
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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892005** Date Collected: 8/16/2017 14:20 Matrix: Solid  
Sample ID: **SB-28(0.5-1.0')** Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>WET CHEMISTRY</b>										
Moisture	19.8		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	80.2		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Lead, Total	27.6		mg/kg	1.2	0.40	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:03	ZMC	A1

  
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**ANALYTICAL RESULTS**

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892006**  
Sample ID: **SB-28(1.0-1.5')**Date Collected: 8/16/2017 14:25 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>WET CHEMISTRY</b>										
Moisture	17.9		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	82.1		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Lead, Total	11.8		mg/kg	1.1	0.35	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:07	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892007**  
Sample ID: **SB-28(1.5-2.0')**

Date Collected: 8/16/2017 14:30 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
alpha-BHC	9.8 U	U	ug/kg	9.8	0.86	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
gamma-BHC	9.8 U	U	ug/kg	9.8	0.80	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
4,4'-DDD	7.9J	J	ug/kg	19.0	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
4,4'-DDE	16.2J	J	ug/kg	19.0	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
4,4'-DDT	19.4		ug/kg	19.0	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Dieldrin	19.0 U	U	ug/kg	19.0	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Endosulfan II	19.0 U	U	ug/kg	19.0	4.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Endosulfan Sulfate	19.0 U	U	ug/kg	19.0	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Endrin	19.0 U	U	ug/kg	19.0	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Endrin Aldehyde	19.0 U	U	ug/kg	19.0	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Endrin Ketone	19.0 U	U	ug/kg	19.0	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Methoxychlor	19.0 U	U	ug/kg	19.0	2.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Toxaphene	201 U	U	ug/kg	201	33.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	84.8		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
Tetrachloro-m-xylene (S)	73.4		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 20:47	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	17.9		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	82.1		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	9.1		mg/kg	1.6	0.53	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:24	ZMC	A1
Lead, Total	26.6		mg/kg	1.1	0.35	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:24	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892007**  
Sample ID: **SB-28(1.5-2.0')**

Date Collected: 8/16/2017 14:30 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892008**  
Sample ID: **SB-28(4.5-5.0')**

Date Collected: 8/16/2017 14:40 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.90	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.78	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.84	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
4,4'-DDD	19.7 U	U	ug/kg	19.7	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
4,4'-DDE	46.5		ug/kg	19.7	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
4,4'-DDT	10.8J	J	ug/kg	19.7	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Dieldrin	19.7 U	U	ug/kg	19.7	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Endosulfan II	19.7 U	U	ug/kg	19.7	4.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Endosulfan Sulfate	19.7 U	U	ug/kg	19.7	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Endrin	19.7 U	U	ug/kg	19.7	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Endrin Aldehyde	19.7 U	U	ug/kg	19.7	2.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Endrin Ketone	19.7 U	U	ug/kg	19.7	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Methoxychlor	19.7 U	U	ug/kg	19.7	2.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Toxaphene	209 U	U	ug/kg	209	34.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	77.4		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
Tetrachloro-m-xylene (S)	72.2		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 18:13	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	17.3		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	82.7		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	9.2		mg/kg	1.8	0.59	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:33	ZMC	A1
Lead, Total	18.5		mg/kg	1.2	0.39	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:33	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892008**  
Sample ID: **SB-28(4.5-5.0')**

Date Collected: 8/16/2017 14:40 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892009**  
Sample ID: **SB-24(0-0.5')**

Date Collected: 8/16/2017 17:15 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
alpha-BHC	10.8 U	U	ug/kg	10.8	0.95	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
delta-BHC	10.8 U	U	ug/kg	10.8	0.82	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
4,4'-DDD	20.9 U	U	ug/kg	20.9	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
4,4'-DDE	20.9 U	U	ug/kg	20.9	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
4,4'-DDT	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Dieldrin	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Endosulfan II	20.9 U	U	ug/kg	20.9	4.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Endosulfan Sulfate	20.9 U	U	ug/kg	20.9	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Endrin	20.9 U	U	ug/kg	20.9	1.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Endrin Aldehyde	20.9 U	U	ug/kg	20.9	2.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Endrin Ketone	20.9 U	U	ug/kg	20.9	2.9	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Methoxychlor	20.9 U	U	ug/kg	20.9	2.8	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Toxaphene	221 U	U	ug/kg	221	36.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	78.5		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
Tetrachloro-m-xylene (S)	72		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:03	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	21.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	79.0		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	10.8		mg/kg	1.7	0.58	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:42	ZMC	A1
Lead, Total	32.1		mg/kg	1.2	0.38	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:42	ZMC	A1

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892009**  
Sample ID: **SB-24(0-0.5')**

Date Collected: 8/16/2017 17:15 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892012**  
Sample ID: **SB-24(1.5-2.0')**

Date Collected: 8/16/2017 17:30 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
alpha-BHC	9.8 U	U	ug/kg	9.8	0.87	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
gamma-BHC	9.8 U	U	ug/kg	9.8	0.81	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
4,4'-DDD	2.6J	J	ug/kg	19.1	1.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
4,4'-DDE	19.1 U	U	ug/kg	19.1	2.6	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
4,4'-DDT	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Dieldrin	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Endrin	19.1 U	U	ug/kg	19.1	1.4	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Methoxychlor	19.1 U	U	ug/kg	19.1	2.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Toxaphene	202 U	U	ug/kg	202	33.5	SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	79.1		%	30 - 135		SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
Tetrachloro-m-xylene (S)	70.8		%	30 - 111		SW846 8081B	8/18/17 02:20 CMA	8/23/17 21:18	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	17.4		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
Total Solids	82.6		%	0.1	0.01	S2540G-11		8/18/17 12:51	AXD	
<b>METALS</b>										
Arsenic, Total	8.8		mg/kg	1.7	0.58	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:46	ZMC	A1
Lead, Total	18.5		mg/kg	1.2	0.38	SW846 6020A	8/22/17 02:50 LXC	8/22/17 08:46	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892012**  
Sample ID: **SB-24(1.5-2.0')**

Date Collected: 8/16/2017 17:30 Matrix: Solid  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892013**  
Sample ID: **SB-24(4.5-5.0')**

Date Collected: 8/16/2017 17:40 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.93	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.86	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
4,4'-DDD	34.3		ug/kg	20.4	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
4,4'-DDE	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
4,4'-DDT	72.5		ug/kg	20.4	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Dieldrin	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Endosulfan II	20.4 U	U	ug/kg	20.4	4.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Endosulfan Sulfate	20.4 U	U	ug/kg	20.4	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Endrin	20.4 U	U	ug/kg	20.4	1.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Endrin Aldehyde	20.4 U	U	ug/kg	20.4	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Endrin Ketone	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Methoxychlor	20.4 U	U	ug/kg	20.4	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Toxaphene	216 U	U	ug/kg	216	35.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	86.2		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
Tetrachloro-m-xylene (S)	71.3		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:00	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	19.6		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	80.4		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	9.6		mg/kg	1.6	0.55	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:37	ZMC	A1
Lead, Total	25.1		mg/kg	1.1	0.36	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:37	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2254892 ERM144|JEFFERSON COUNTY WV

Lab ID: **2254892013**  
Sample ID: **SB-24(4.5-5.0')**

Date Collected: 8/16/2017 17:40 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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**Environmental**

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Co. Name: **FAW**

Contact (person): **DAVE CONNELLY**

Address: **Same as previous**

Phone:

Bill to (if different than Report to):

PO#:

Project Name#:

ALS Quote #:

TAT: ☒ Normal-Standard TAT is 10-12 business days.  
☐ Rush-Subject to ALS approval and surcharges.

Email? ☐ Y ☐ N

Fax? ☐ Y ☐ N

Sample Description/Location  
(as it will appear on the lab report)

COC Comments

Sample Date

Military Time

Gorc

Matrix

Enter Number of Containers Per Analysis

1 SB-30 (1.0'-1.5') HOLD 8/16/17 1350 6 S  
2 SB-30 (1.5'-2.0') HOLD 8/16/17 1355 6 S  
3 SB-30 (4.5'-5.0') HOLD 8/16/17 1400 6 S  
4 SB-28 (0'-0.5') HOLD 8/16/17 1415 6 S  
5 SB-28 (0.5'-1.0') HOLD 8/16/17 1420 6 S  
6 SB-28 (1.0'-1.5') HOLD 8/16/17 1435 6 S  
7 SB-28 (1.5'-2.0') HOLD 8/16/17 1430 6 S  
8 SB-28 (4.5'-5.0') HOLD 8/16/17 1440 6 S

SAMPLED BY (Please Print):

Project Comments:

Relinquished By / Company Name

Date

Time

Received By / Company Name

Date

Time

1 *Proffitt* 8/17/17 0810 2 *ALS-BLUE* 8-17 810  
3 *Proffitt* 8-17 1644 4 *gm ALS* 8-17 1644  
5  
7  
9

*8/18/17-0041*

ANALYSES/METHOD REQUESTED

Container Type: **CG** → **802** → **gm**

Preservatives: **—**

ALS FIELD SERVICES

Container in good condition? ☒ Y ☐ N

COC Labels complete/accurate? ☒ Y ☐ N

Received on ice? ☒ Y ☐ N

(if present) Seals intact? ☒ Y ☐ N

Custody seals Present? ☒ Y ☐ N

Correct sample volume? ☒ Y ☐ N

Correct preservation? ☒ Y ☐ N

Headspace/Volatilized? ☒ Y ☐ N

Circle appropriate Y or N.

Cooler Temp: **6**

Therm ID: **309**

No. of Containers: **—**

Notes: **—**

ANALYSES/METHOD REQUESTED

Standard ☐ CLP-like ☐ NJ-Reduced ☐ NJ-Full ☐ Other ☐

SWA Form 7-0 ☐ yes ☐ no

State Samples Collected In? ☐ MD ☐ NJ ☐ NY ☐ PA

Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other ☐

DOD Criteria Required? ☐ YES ☐ NO

DOD Criteria Required? ☐ YES ☐ NO





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Environmental

# CHAIN OF CUSTODY/

## REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

Co. Name: Bare Connolly (ERM)  
Contact (Phone): DAVE CONNOLLY  
Address: SANDE 204 Chase Drive  
Hurricane WV

Phone: 304 757 4777

Bill to (if different than Report to): ERM

PO#:

Project Name#:

ALS Quote #:

TAT: ☐ Normal-Standard TAT is 10-12 business days.  
☐ Rush-Subject to ALS approval and surcharges.

Date Required:  
Approved By:

Email? ☐ Y ☐ N  
Fax? ☐ Y ☐ N

Sample Description/Location  
(as it will appear on the lab report)

COC Comments

Sample Date

Matrix

Enter Number of Containers Per Analysis

1	SB-24 (0.0-0.5')	HOLD	8/16/17	1715	6	S	1
2	SB-24 (0.5'-1.0')	HOLD	8/16/17	1720	6	S	1
3	SB-24 (1.0'-1.5')	HOLD	8/16/17	1725	6	S	1
4	SB-24 (1.5'-2.0')	HOLD	8/16/17	1730	6	S	1
5	SB-24 (4.5'-5.0')	HOLD	8/16/17	1740	6	S	1
6							
7							
8							

SAMPLED BY (Please Print): Ryan Baizer

Project Comments:

FLUID 2057

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<u>[Signature]</u>	8/17/17	0810	ALS Baizer	8-17	810
<u>ALS BA</u>	8-17	1644	gn ALS	8-17	1644

Receipt Information		Container in good condition?	
Received by	Initials	COCA labels complete/accurate?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Cooler Temp:		Recoiled on ice?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Therm. ID:		(If present) Seals intact?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
No. of Coolers:		Custody seals Present?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Notes:		Correct sample volume?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
		Correct preservation?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
		Headspace/Volatiles?	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
		Circle appropriate Y or N.	

ANALYSES/METHOD REQUESTED		ALS FIELD SERVICES	
		Pickup	<input type="checkbox"/>
		Labor	<input type="checkbox"/>
		Composite Sampling	<input type="checkbox"/>
		Field Equipment	<input type="checkbox"/>
		Other:	<input type="checkbox"/>
		SDWA Form 700	Delivered In?
		Standard	MD <input type="checkbox"/>
		CLP-like	NJ <input type="checkbox"/>
		NJ-Reduced	IRY <input type="checkbox"/>
		NJ-Full	PA <input type="checkbox"/>
		Other	
		Head-77	
		DD Criteria Required?	

Copies: WRITE - ORIGINAL CANARY - CUSTOMER COPY

Matrix: AL-Air; DW-Drinking Water; GW-Groundwater; OL-Oil; OL-Other Liquid; SL-Sludge; SD-Solid; WP-Wipe; WW-Wastewater

Container Type: AG-Ambic Glass; CG-Clear Glass; PL-Plastic. Container Size: 250ml, 500ml, 1L, 5oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 01-2013



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August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:32:38 PM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2255267</b>
Purchase Order:		Workorder ID:	<b>ERM146 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255267001	SB-27(1.5-2.0)	Solid	8/17/2017 13:01	8/18/2017 15:29	Collected by Client
2255267002	SB-27(4.5-5.0)	Other	8/17/2017 13:03	8/18/2017 15:29	Collected by Client
2255267003	SB-27(9.5-10.0)	Solid	8/17/2017 13:08	8/18/2017 15:29	Collected by Client
2255267004	SB-27(14.5-15.0)	Other	8/17/2017 13:13	8/18/2017 15:29	Collected by Client
2255267005	SB-27(19.5-20.0)	Other	8/17/2017 13:18	8/18/2017 15:29	Collected by Client
2255267006	SB-27(24.5-25.0)	Solid	8/17/2017 13:23	8/29/2017 11:34	Collected by Client
2255267007	SB-26(0-0.5)	Solid	8/17/2017 14:25	8/18/2017 15:29	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2255267001**Sample ID:** SB-27(1.5-2.0)**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255267003**Sample ID:** SB-27(9.5-10.0)**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255267006**Sample ID:** SB-27(24.5-25.0)**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255267007**Sample ID:** SB-26(0-0.5)**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267001**  
Sample ID: **SB-27(1.5-2.0)**

Date Collected: 8/17/2017 13:01 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.4 U	U	ug/kg	9.4	3.0	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
alpha-BHC	9.4 U	U	ug/kg	9.4	0.83	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
beta-BHC	9.4 U	U	ug/kg	9.4	1.0	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
delta-BHC	9.4 U	U	ug/kg	9.4	0.72	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
gamma-BHC	9.4 U	U	ug/kg	9.4	0.78	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
alpha-Chlordane	9.4 U	U	ug/kg	9.4	1.0	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
gamma-Chlordane	9.4 U	U	ug/kg	9.4	1.6	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
4,4'-DDD	18.3 U	U	ug/kg	18.3	1.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
4,4'-DDE	12.8J	J	ug/kg	18.3	2.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
4,4'-DDT	4.9J	J	ug/kg	18.3	2.1	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Dieldrin	18.3 U	U	ug/kg	18.3	2.1	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Endosulfan I	9.4 U	U	ug/kg	9.4	1.2	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Endosulfan II	18.3 U	U	ug/kg	18.3	3.8	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Endosulfan Sulfate	18.3 U	U	ug/kg	18.3	1.2	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Endrin	18.3 U	U	ug/kg	18.3	1.3	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Endrin Aldehyde	18.3 U	U	ug/kg	18.3	2.0	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Endrin Ketone	18.3 U	U	ug/kg	18.3	2.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Heptachlor	9.4 U	U	ug/kg	9.4	0.94	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Heptachlor Epoxide	9.4 U	U	ug/kg	9.4	0.94	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Methoxychlor	18.3 U	U	ug/kg	18.3	2.4	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Toxaphene	194 U	U	ug/kg	194	32.1	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	66.2		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
Tetrachloro-m-xylene (S)	57.3		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:40	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	14.3		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	85.7		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	12.6		mg/kg	1.5	0.50	SW846 6020A	8/23/17 01:45 LXC	8/23/17 11:14	ZMC	A1
Lead, Total	36.1		mg/kg	1.0	0.33	SW846 6020A	8/23/17 01:45 LXC	8/23/17 11:14	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267001**  
Sample ID: **SB-27(1.5-2.0)**

Date Collected: 8/17/2017 13:01 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267003**  
Sample ID: **SB-27(9.5-10.0)**

Date Collected: 8/17/2017 13:08 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.0 U	U	ug/kg	11.0	3.6	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
alpha-BHC	11.0 U	U	ug/kg	11.0	0.97	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
beta-BHC	11.0 U	U	ug/kg	11.0	1.2	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
delta-BHC	11.0 U	U	ug/kg	11.0	0.84	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
gamma-BHC	11.0 U	U	ug/kg	11.0	0.91	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
alpha-Chlordane	11.0 U	U	ug/kg	11.0	1.2	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
gamma-Chlordane	11.0 U	U	ug/kg	11.0	1.9	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
4,4'-DDD	21.4 U	U	ug/kg	21.4	1.7	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
4,4'-DDE	21.4 U	U	ug/kg	21.4	2.9	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
4,4'-DDT	21.4 U	U	ug/kg	21.4	2.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Dieldrin	21.4 U	U	ug/kg	21.4	2.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Endosulfan I	11.0 U	U	ug/kg	11.0	1.4	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Endosulfan II	21.4 U	U	ug/kg	21.4	4.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Endosulfan Sulfate	21.4 U	U	ug/kg	21.4	1.4	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Endrin	21.4 U	U	ug/kg	21.4	1.6	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Endrin Aldehyde	21.4 U	U	ug/kg	21.4	2.3	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Endrin Ketone	21.4 U	U	ug/kg	21.4	3.0	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Heptachlor	11.0 U	U	ug/kg	11.0	1.1	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Heptachlor Epoxide	11.0 U	U	ug/kg	11.0	1.1	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Methoxychlor	21.4 U	U	ug/kg	21.4	2.8	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Toxaphene	227 U	U	ug/kg	227	37.5	SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	59.5		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
Tetrachloro-m-xylene (S)	57.7		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/23/17 23:56	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	24.8		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	75.2		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	7.2		mg/kg	2.0	0.66	SW846 6020A	8/23/17 01:45 LXC	8/23/17 11:22	ZMC	A1
Lead, Total	12.5		mg/kg	1.3	0.44	SW846 6020A	8/23/17 01:45 LXC	8/23/17 11:22	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267003**  
Sample ID: **SB-27(9.5-10.0)**

Date Collected: 8/17/2017 13:08 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267006**  
Sample ID: **SB-27(24.5-25.0)**

Date Collected: 8/17/2017 13:23 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
alpha-BHC	9.8 U	U	ug/kg	9.8	0.87	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
gamma-BHC	9.8 U	U	ug/kg	9.8	0.81	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
4,4'-DDD	19.1 U	U	ug/kg	19.1	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
4,4'-DDE	19.1 U	U	ug/kg	19.1	2.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
4,4'-DDT	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Dieldrin	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Endrin	19.1 U	U	ug/kg	19.1	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Methoxychlor	19.1 U	U	ug/kg	19.1	2.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Toxaphene	203 U	U	ug/kg	203	33.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	87.6		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
Tetrachloro-m-xylene (S)	76.9		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:03	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	18.0		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	82.0		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	6.4		mg/kg	1.8	0.61	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:41	ZMC	A1
Lead, Total	12.5		mg/kg	1.2	0.40	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:41	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267006**  
Sample ID: **SB-27(24.5-25.0)**

Date Collected: 8/17/2017 13:23 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267007**  
Sample ID: **SB-26(0-0.5)**

Date Collected: 8/17/2017 14:25 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
4,4'-DDD	19.5 U	U	ug/kg	19.5	1.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
4,4'-DDE	13.0J	J	ug/kg	19.5	2.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
4,4'-DDT	5.4J	J	ug/kg	19.5	2.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	92.9		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
Tetrachloro-m-xylene (S)	79.9		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:43	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	16.6		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	83.4		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	8.6		mg/kg	1.8	0.59	SW846 6020A	8/23/17 01:45 LXC	8/23/17 11:56	ZMC	A1
Lead, Total	17.3		mg/kg	1.2	0.39	SW846 6020A	8/23/17 01:45 LXC	8/23/17 11:56	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID: **2255267007**  
Sample ID: **SB-26(0-0.5)**

Date Collected: 8/17/2017 14:25 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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## QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

**QC Batch:** EXTR/48873 **Analysis Method:** SW846 8081B

**QC Batch Method:** SW846 3546

**Associated Lab Samples:** 2255267001, 2255267003, 2255267007

### METHOD BLANK: 2593010

Parameter	Blank Result	Units	Reporting Limit
Aldrin	1.7 U	ug/kg	1.7
alpha-BHC	1.7 U	ug/kg	1.7
beta-BHC	1.7 U	ug/kg	1.7
delta-BHC	1.7 U	ug/kg	1.7
gamma-BHC	1.7 U	ug/kg	1.7
alpha-Chlordane	1.7 U	ug/kg	1.7
gamma-Chlordane	1.7 U	ug/kg	1.7
4,4'-DDD	3.3 U	ug/kg	3.3
4,4'-DDE	3.3 U	ug/kg	3.3
4,4'-DDT	3.3 U	ug/kg	3.3
Dieldrin	3.3 U	ug/kg	3.3
Endosulfan I	1.7 U	ug/kg	1.7
Endosulfan II	3.3 U	ug/kg	3.3
Endosulfan Sulfate	3.3 U	ug/kg	3.3
Endrin	3.3 U	ug/kg	3.3
Endrin Aldehyde	3.3 U	ug/kg	3.3
Endrin Ketone	3.3 U	ug/kg	3.3
Heptachlor	1.7 U	ug/kg	1.7
Heptachlor Epoxide	1.7 U	ug/kg	1.7
Methoxychlor	3.3 U	ug/kg	3.3
Toxaphene	35.0 U	ug/kg	35.0
Decachlorobiphenyls (S)	88.8	%	30 - 135
Tetrachloro-m-xylene (S)	75.1	%	30 - 111

### LABORATORY CONTROL SAMPLE: 2593011

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Aldrin	85.2	ug/kg	33.3	28.4	58 - 103
alpha-BHC	85.1	ug/kg	33.3	28.4	57 - 105
beta-BHC	77.2	ug/kg	33.3	25.7	53 - 106
delta-BHC	93.1	ug/kg	33.3	31.0	60 - 103
gamma-BHC	87	ug/kg	33.3	29.0	59 - 102
alpha-Chlordane	89.3	ug/kg	33.3	29.8	62 - 98
gamma-Chlordane	88.6	ug/kg	33.3	29.5	58 - 103
4,4'-DDD	111	ug/kg	33.3	37.0	57 - 111

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### QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

4,4'-DDE	102	ug/kg	33.3	34.2	63 - 112
4,4'-DDT	114	ug/kg	33.3	38.0	60 - 122
Dieldrin	85.8	ug/kg	33.3	28.6	62 - 109
Endosulfan I	81.2	ug/kg	33.3	27.1	57 - 98
Endosulfan II	74.3	ug/kg	33.3	24.8	59 - 112
Endosulfan Sulfate	90.4	ug/kg	33.3	30.1	27 - 96
Endrin	103	ug/kg	33.3	34.3	63 - 108
Endrin Aldehyde	75.4	ug/kg	33.3	25.1	21 - 92
Endrin Ketone	87.3	ug/kg	33.3	29.1	32 - 103
Heptachlor	81.9	ug/kg	33.3	27.3	51 - 105
Heptachlor Epoxide	85.7	ug/kg	33.3	28.6	62 - 99
Methoxychlor	112	ug/kg	33.3	37.4	50 - 114
Toxaphene		ug/kg		35.0 U	
Decachlorobiphenyls (S)	91.9	%			30 - 135
Tetrachloro-m-xylene (S)	74.8	%			30 - 111

MATRIX SPIKE: 2593012 DUPLICATE: 2593013 ORIGINAL: 2255267003

\*\*\*\*NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Aldrin	0	ug/kg	31.6	22.9463	22.9172	72.5	70.1	58 - 103	.13	40
alpha-BHC	0	ug/kg	31.6	22.1736	22.0934	70.1	67.6	57 - 105	.36	40
beta-BHC	0	ug/kg	31.6	22.4888	22.3335	71.1	68.3	53 - 106	.69	40
delta-BHC	0	ug/kg	31.6	19.6372	19.551	62.1	59.8*	60 - 103	.44	40
gamma-BHC	0	ug/kg	31.6	22.1011	21.7629	69.8	66.6	59 - 102	1.54	40
alpha-Chlordane	0	ug/kg	31.6	23.5761	23.1431	74.5	70.8	62 - 98	1.85	40
gamma-Chlordane	0	ug/kg	31.6	24.5665	24.3921	77.6	74.6	58 - 103	.71	40
4,4'-DDD	0	ug/kg	31.6	22.4041	22.5348	70.8	69	57 - 111	.58	40
4,4'-DDE	0	ug/kg	31.6	24.2937	24.2478	76.8	74.2	63 - 112	.19	40
4,4'-DDT	0	ug/kg	31.6	23.6485	25.0509	74.7	76.7	60 - 122	5.76	40
Dieldrin	0	ug/kg	31.6	25.0455	24.7454	79.1	75.7	62 - 109	1.21	40
Endosulfan I	0	ug/kg	31.6	23.839	23.2046	75.3	71	57 - 98	2.7	40
Endosulfan II	0	ug/kg	31.6	25.9223	25.1311	81.9	76.9	59 - 112	3.1	40
Endosulfan Sulfate	0	ug/kg	31.6	23.7942	23.1525	75.2	70.8	27 - 96	2.73	40
Endrin	0	ug/kg	31.6	23.2912	23.8653	73.6	73	63 - 108	2.43	40
Endrin Aldehyde	0	ug/kg	31.6	23.3042	23.2104	73.6	71	21 - 92	.4	40
Endrin Ketone	0	ug/kg	31.6	24.3499	23.1511	76.9	70.8	32 - 103	5.05	40
Heptachlor	0	ug/kg	31.6	26.2203	25.5485	82.9	78.2	51 - 105	2.6	40
Heptachlor Epoxide	0	ug/kg	31.6	23.3551	23.483	73.8	71.9	62 - 99	.55	35
Methoxychlor	0	ug/kg	31.6	24.5238	24.1103	77.5	73.8	50 - 114	1.7	40
Decachlorobiphenyls (S)	76	%				76	77.1	30 - 135		
Tetrachloro-m-xylene (S)	67.4	%				67.4	66.2	30 - 111		

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### QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

**QC Batch:** EXTR/48978      **Analysis Method:** SW846 8081B  
**QC Batch Method:** SW846 3546  
**Associated Lab Samples:** 2255267006

#### METHOD BLANK: 2597949

Parameter	Blank Result	Units	Reporting Limit
Aldrin	1.7 U	ug/kg	1.7
alpha-BHC	1.7 U	ug/kg	1.7
beta-BHC	1.7 U	ug/kg	1.7
delta-BHC	1.7 U	ug/kg	1.7
gamma-BHC	1.7 U	ug/kg	1.7
alpha-Chlordane	1.7 U	ug/kg	1.7
gamma-Chlordane	1.7 U	ug/kg	1.7
4,4'-DDD	3.3 U	ug/kg	3.3
4,4'-DDE	3.3 U	ug/kg	3.3
4,4'-DDT	3.3 U	ug/kg	3.3
Dieldrin	3.3 U	ug/kg	3.3
Endosulfan I	1.7 U	ug/kg	1.7
Endosulfan II	3.3 U	ug/kg	3.3
Endosulfan Sulfate	3.3 U	ug/kg	3.3
Endrin	3.3 U	ug/kg	3.3
Endrin Aldehyde	3.3 U	ug/kg	3.3
Endrin Ketone	3.3 U	ug/kg	3.3
Heptachlor	1.7 U	ug/kg	1.7
Heptachlor Epoxide	1.7 U	ug/kg	1.7
Methoxychlor	3.3 U	ug/kg	3.3
Toxaphene	35.0 U	ug/kg	35.0
Decachlorobiphenyls (S)	82.3	%	30 - 135
Tetrachloro-m-xylene (S)	69.6	%	30 - 111

#### LABORATORY CONTROL SAMPLE: 2597950

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Aldrin	83.6	ug/kg	33.3	27.9	58 - 103
alpha-BHC	83.4	ug/kg	33.3	27.8	57 - 105
beta-BHC	79.6	ug/kg	33.3	26.5	53 - 106
delta-BHC	92.3	ug/kg	33.3	30.8	60 - 103
gamma-BHC	84.7	ug/kg	33.3	28.2	59 - 102
alpha-Chlordane	88.3	ug/kg	33.3	29.4	62 - 98
gamma-Chlordane	87.6	ug/kg	33.3	29.2	58 - 103
4,4'-DDD	93.2	ug/kg	33.3	31.1	57 - 111

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## QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

4,4'-DDE	92	ug/kg	33.3	30.7	63 - 112
4,4'-DDT	89.1	ug/kg	33.3	29.7	60 - 122
Dieldrin	88.7	ug/kg	33.3	29.6	62 - 109
Endosulfan I	84.9	ug/kg	33.3	28.3	57 - 98
Endosulfan II	82.5	ug/kg	33.3	27.5	59 - 112
Endosulfan Sulfate	89.6	ug/kg	33.3	29.9	27 - 96
Endrin	94.9	ug/kg	33.3	31.6	63 - 108
Endrin Aldehyde	72.2	ug/kg	33.3	24.1	21 - 92
Endrin Ketone	89.2	ug/kg	33.3	29.7	32 - 103
Heptachlor	87.6	ug/kg	33.3	29.2	51 - 105
Heptachlor Epoxide	86	ug/kg	33.3	28.7	62 - 99
Methoxychlor	80.1	ug/kg	33.3	26.7	50 - 114
Toxaphene		ug/kg		35.0 U	
Decachlorobiphenyls (S)	87.1	%			30 - 135
Tetrachloro-m-xylene (S)	69.2	%			30 - 111

SAMPLE DUPLICATE: 2597952 ORIGINAL: 2257028001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Aldrin	0	ug/kg	0	NC	40
alpha-BHC	0	ug/kg	0	NC	40
beta-BHC	0	ug/kg	0	NC	40
delta-BHC	0	ug/kg	0	NC	40
gamma-BHC	0	ug/kg	0	NC	40
4,4'-DDD	0	ug/kg	0	NC	40
4,4'-DDE	0	ug/kg	0	NC	40
4,4'-DDT	0	ug/kg	0	NC	40
Dieldrin	0	ug/kg	0	NC	40
Endosulfan I	0	ug/kg	0	NC	40
Endosulfan II	0	ug/kg	0	NC	40
Endosulfan Sulfate	0	ug/kg	0	NC	40
Endrin	0	ug/kg	0	NC	40
Endrin Aldehyde	0	ug/kg	0	NC	40
Endrin Ketone	0	ug/kg	0	NC	40
Heptachlor	0	ug/kg	0	NC	40
Heptachlor Epoxide	0	ug/kg	0	NC	35
Methoxychlor	0	ug/kg	0	NC	40
Toxaphene	0	ug/kg	0	NC	40

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## QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

**QC Batch:** MDIG/66999 **Analysis Method:** SW846 6020A

**QC Batch Method:** SW846 3051

**Associated Lab Samples:** 2255267001, 2255267003, 2255267007

### METHOD BLANK: 2593992

Parameter	Blank Result	Units	Reporting Limit
Arsenic, Total	1.5 U	mg/kg	1.5
Lead, Total	1.0 U	mg/kg	1.0

### LABORATORY CONTROL SAMPLE: 2593993

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Arsenic, Total	114	mg/kg	20	22.9	80 - 120
Lead, Total	113	mg/kg	20	22.5	80 - 120

### MATRIX SPIKE: 2593994 DUPLICATE: 2593995 ORIGINAL: 2255267003

\*\*\*\*NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Arsenic, Total	5.409	mg/kg	17.2	21.3556	20.93432	92.5	91.6	75 - 125	1.99	20
Lead, Total	9.4425	mg/kg	17.2	29.86207	29.4072	118	118	75 - 125	1.53	20

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## QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

**QC Batch:** MDIG/67156

**Analysis Method:** SW846 6020A

**QC Batch Method:** SW846 3051

**Associated Lab Samples:** 2255267006

### METHOD BLANK: 2597977

Parameter	Blank Result	Units	Reporting Limit
Arsenic, Total	1.5 U	mg/kg	1.5
Lead, Total	1.0 U	mg/kg	1.0

### LABORATORY CONTROL SAMPLE: 2597978

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Arsenic, Total	103	mg/kg	20	20.6	80 - 120
Lead, Total	112	mg/kg	20	22.4	80 - 120

### MATRIX SPIKE: 2597979 DUPLICATE: 2597980 ORIGINAL: 2254892006

\*\*\*\*NOTE - The Original Result shown below is a raw result and is only used for the purpose of calculating Matrix Spike percent recoveries. This result is not a final value and cannot be used as such.

Parameter	Original Result	Units	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD
Lead, Total	9.68158	mg/kg	17.9	27.60357	30.10636	100	121	75 - 125	8.67	20

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### QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

**QC Batch:** WETC/191950 **Analysis Method:** S2540G-11

**QC Batch Method:** S2540G-11

**Associated Lab Samples:** 2255267001, 2255267003, 2255267007

SAMPLE DUPLICATE: 2592813 ORIGINAL: 2255267001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	14.2658	%	16.2775	13.2*	10
Total Solids	85.7341	%	83.7224	2.37	5

SAMPLE DUPLICATE: 2592814 ORIGINAL: 2255271002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	12.0093	%	11.8962	.95	10
Total Solids	87.9906	%	88.1037	.13	5

SAMPLE DUPLICATE: 2592815 ORIGINAL: 2255273002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	17.5521	%	16.1971	8.03	10
Total Solids	82.4478	%	83.8028	1.63	5

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### QUALITY CONTROL DATA

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

**QC Batch:** WETC/192394      **Analysis Method:** S2540G-11  
**QC Batch Method:** S2540G-11  
**Associated Lab Samples:** 2255267006

SAMPLE DUPLICATE: 2598247 ORIGINAL: 2256821002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	71.9681	%	71.7504	.3	10
Total Solids	28.0318	%	28.2495	.77	5

SAMPLE DUPLICATE: 2598248 ORIGINAL: 2257214009

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	14.4594	%	16.1937	11.3*	10
Total Solids	85.5405	%	83.8062	2.05	5

SAMPLE DUPLICATE: 2598249 ORIGINAL: 2254890005

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	21.1111	%	21.2749	.77	10
Total Solids	78.8888	%	78.725	.21	5

SAMPLE DUPLICATE: 2598250 ORIGINAL: 2255273006

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	23.0978	%	23.7864	2.94	10
Total Solids	76.9021	%	76.2135	.9	5

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2255267 ERM146|JEFFERSON COUNTY WV

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2255267001	SB-27(1.5-2.0)			S2540G-11	WETC/191950
2255267003	SB-27(9.5-10.0)			S2540G-11	WETC/191950
2255267007	SB-26(0-0.5)			S2540G-11	WETC/191950
2255267001	SB-27(1.5-2.0)	SW846 3546	EXTR/48873	SW846 8081B	SVGC/46409
2255267003	SB-27(9.5-10.0)	SW846 3546	EXTR/48873	SW846 8081B	SVGC/46409
2255267007	SB-26(0-0.5)	SW846 3546	EXTR/48873	SW846 8081B	SVGC/46409
2255267001	SB-27(1.5-2.0)	SW846 3051	MDIG/66999	SW846 6020A	META/58657
2255267003	SB-27(9.5-10.0)	SW846 3051	MDIG/66999	SW846 6020A	META/58657
2255267007	SB-26(0-0.5)	SW846 3051	MDIG/66999	SW846 6020A	META/58657
2255267006	SB-27(24.5-25.0)	SW846 3546	EXTR/48978	SW846 8081B	SVGC/46506
2255267006	SB-27(24.5-25.0)	SW846 3051	MDIG/67156	SW846 6020A	META/58750
2255267006	SB-27(24.5-25.0)			S2540G-11	WETC/192394

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34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**Environmental**

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 1  
Courier:             
Tracking #:           



\* 2 2 5 5 2 6 7 \*

Co. Name: <b>ELM</b>		Phone: <b>          </b>	
Contact (Report to): <b>DAVE CANNELLY</b>		Therm. ID: <b>309</b>	
Address: <b>          </b>		Cooler Temp: <b>          </b>	
Bill to (if different than Report to): <b>          </b>		No. of Coolers: <b>          </b>	
Project Name/ID: <b>          </b>		Notes: <b>          </b>	
TAT: <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.		Correct sample volume? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Email? <input type="checkbox"/> Y <input type="checkbox"/> N		Correct preservation? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Fax? <input type="checkbox"/> Y <input type="checkbox"/> N		Headspace/volatiles? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Sample Description/Location (as it will appear on the lab record)		Container in good condition? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
COC Comments		COC Labels complete/accurate? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Sample Date		Received on ice? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Military Time		(if present) Seals intact? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
ALS Quote #:		Custody seals Present? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Date Required:		ALS FIELD SERVICES	
Approved By:		<input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment <input type="checkbox"/> Other: <b>          </b>	
Enter Number of Containers Per Analysis		SOWA Form? <input type="checkbox"/> YES <input type="checkbox"/> NO Data Deliverables: <input type="checkbox"/> Standard <input type="checkbox"/> CLP-like <input type="checkbox"/> NJ-Reduced <input type="checkbox"/> NJ-Full <input type="checkbox"/> If yes, format type: <b>          </b> EDS: <input type="checkbox"/> YES <input type="checkbox"/> NO	
1 <b>SB-27 (1.5'-2.0')</b> 2 <b>SB-27 (4.5'-5.0')</b> 3 <b>MC/MSD</b> 4 <b>SB-27 (9.5'-10.0')</b> 5 <b>SB-27 (14.5'-15.0')</b> 6 <b>SB-27 (19.5'-20.0')</b> 7 <b>SB-27 (24.5'-25.0')</b> 8 <b>SB-26 (0'-0.5')</b>		1 <b>For MS/1 for MSD gmc</b> 2 <b>          </b> 3 <b>          </b> 4 <b>          </b> 5 <b>          </b> 6 <b>          </b> 7 <b>          </b> 8 <b>          </b>	
Relinquished By / Company Name <b>          </b>		Received By / Company Name <b>          </b>	
Date		Date	
Time		Time	
1 <b>8/16/17 0800</b> 2 <b>8/16/17 0800</b> 3 <b>8/16/17 0800</b> 4 <b>8/16/17 0800</b> 5 <b>8/16/17 0800</b> 6 <b>8/16/17 0800</b> 7 <b>8/16/17 0800</b> 8 <b>8/16/17 0800</b>		1 <b>8/17/17 0800</b> 2 <b>8/17/17 0800</b> 3 <b>8/17/17 0800</b> 4 <b>8/17/17 0800</b> 5 <b>8/17/17 0800</b> 6 <b>8/17/17 0800</b> 7 <b>8/17/17 0800</b> 8 <b>8/17/17 0800</b>	
Project Comments: <b>          </b>		Project Comments: <b>          </b>	
Relinquished By / Company Name <b>          </b>		Received By / Company Name <b>          </b>	
Date		Date	
Time		Time	
1 <b>8/16/17 0800</b> 2 <b>8/16/17 0800</b> 3 <b>8/16/17 0800</b> 4 <b>8/16/17 0800</b> 5 <b>8/16/17 0800</b> 6 <b>8/16/17 0800</b> 7 <b>8/16/17 0800</b> 8 <b>8/16/17 0800</b>		1 <b>8/17/17 0800</b> 2 <b>8/17/17 0800</b> 3 <b>8/17/17 0800</b> 4 <b>8/17/17 0800</b> 5 <b>8/17/17 0800</b> 6 <b>8/17/17 0800</b> 7 <b>8/17/17 0800</b> 8 <b>8/17/17 0800</b>	

\* G=Grab; C=Composite  
 \*\*Matrix: Air=Air; DW=Drinking Water; GW=Groundwater; G=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater  
 \*\*\*Container Type: AG=Amber Glass; CG=Clear Glass; PL=Plastic; Container Size: 250ml, 500ml, 1L, 5oz., etc. Preservative: HCl, HNO3, NaOH, etc.





**ALS Environmental**



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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:33:13 PM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2255268</b>
Purchase Order:		Workorder ID:	<b>ERM147 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255268001	SB-17(0-0.5')	Solid	8/17/2017 08:45	8/18/2017 15:29	Collected by Client
2255268002	SB-17(0.5-1.0')	Other	8/17/2017 08:47	8/18/2017 15:29	Collected by Client
2255268003	SB-17(1.0-1.5')	Other	8/17/2017 08:49	8/18/2017 15:29	Collected by Client
2255268004	SB-17(1.5-2.0')	Solid	8/17/2017 08:51	8/18/2017 15:29	Collected by Client
2255268005	SB-17(4.5-5.0')	Other	8/17/2017 08:53	8/18/2017 15:29	Collected by Client
2255268006	SB-17(9.5-10.0')	Other	8/17/2017 08:55	8/18/2017 15:29	Collected by Client
2255268007	SB-17(14.5-15.0')	Other	8/17/2017 09:00	8/18/2017 15:29	Collected by Client
2255268008	SB-17(19.5-20.0')	Solid	8/17/2017 09:05	8/29/2017 11:34	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2255268001**Sample ID:** SB-17(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255268004**Sample ID:** SB-17(1.5-2.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255268008**Sample ID:** SB-17(19.5-20.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID: **2255268001**  
Sample ID: **SB-17(0-0.5')**

Date Collected: 8/17/2017 08:45 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.0 U	U	ug/kg	10.0	3.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
alpha-BHC	10.0 U	U	ug/kg	10.0	0.88	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
beta-BHC	10.0 U	U	ug/kg	10.0	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
delta-BHC	10.0 U	U	ug/kg	10.0	0.77	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
gamma-BHC	10.0 U	U	ug/kg	10.0	0.82	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
alpha-Chlordane	10.0 U	U	ug/kg	10.0	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
gamma-Chlordane	10.0 U	U	ug/kg	10.0	1.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
4,4'-DDD	19.4 U	U	ug/kg	19.4	1.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
4,4'-DDE	19.4 U	U	ug/kg	19.4	2.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
4,4'-DDT	19.4 U	U	ug/kg	19.4	2.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Dieldrin	19.4 U	U	ug/kg	19.4	2.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Endosulfan I	10.0 U	U	ug/kg	10.0	1.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Endosulfan II	19.4 U	U	ug/kg	19.4	4.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Endosulfan Sulfate	19.4 U	U	ug/kg	19.4	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Endrin	19.4 U	U	ug/kg	19.4	1.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Endrin Aldehyde	19.4 U	U	ug/kg	19.4	2.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Endrin Ketone	19.4 U	U	ug/kg	19.4	2.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Heptachlor	10.0 U	U	ug/kg	10.0	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Heptachlor Epoxide	10.0 U	U	ug/kg	10.0	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Methoxychlor	19.4 U	U	ug/kg	19.4	2.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Toxaphene	206 U	U	ug/kg	206	34.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	93		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
Tetrachloro-m-xylene (S)	81.3		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/24/17 00:59	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	16.2		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	83.8		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	7.7		mg/kg	1.6	0.53	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:00	ZMC	A1
Lead, Total	16.9		mg/kg	1.1	0.35	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:00	ZMC	A1

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

## ANALYTICAL RESULTS

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID: **2255268001**  
Sample ID: **SB-17(0-0.5')**

Date Collected: 8/17/2017 08:45 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID: **2255268004** Date Collected: 8/17/2017 08:51 Matrix: Solid  
Sample ID: **SB-17(1.5-2.0')** Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.2 U	U	ug/kg	9.2	3.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
alpha-BHC	9.2 U	U	ug/kg	9.2	0.81	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
beta-BHC	9.2 U	U	ug/kg	9.2	0.98	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
delta-BHC	9.2 U	U	ug/kg	9.2	0.70	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
gamma-BHC	9.2 U	U	ug/kg	9.2	0.76	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
alpha-Chlordane	9.2 U	U	ug/kg	9.2	0.98	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
gamma-Chlordane	9.2 U	U	ug/kg	9.2	1.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
4,4'-DDD	17.9 U	U	ug/kg	17.9	1.5	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
4,4'-DDE	17.9 U	U	ug/kg	17.9	2.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
4,4'-DDT	17.9 U	U	ug/kg	17.9	2.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Dieldrin	17.9 U	U	ug/kg	17.9	2.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Endosulfan I	9.2 U	U	ug/kg	9.2	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Endosulfan II	17.9 U	U	ug/kg	17.9	3.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Endosulfan Sulfate	17.9 U	U	ug/kg	17.9	1.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Endrin	17.9 U	U	ug/kg	17.9	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Endrin Aldehyde	17.9 U	U	ug/kg	17.9	2.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Endrin Ketone	17.9 U	U	ug/kg	17.9	2.5	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Heptachlor	9.2 U	U	ug/kg	9.2	0.92	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Heptachlor Epoxide	9.2 U	U	ug/kg	9.2	0.92	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Methoxychlor	17.9 U	U	ug/kg	17.9	2.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Toxaphene	190 U	U	ug/kg	190	31.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.4		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
Tetrachloro-m-xylene (S)	69.9		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/24/17 01:15	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	12.9		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	87.1		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	8.4		mg/kg	1.7	0.56	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:04	ZMC	A1
Lead, Total	13.0		mg/kg	1.1	0.37	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:04	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID: **2255268004**  
Sample ID: **SB-17(1.5-2.0')**

Date Collected: 8/17/2017 08:51 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID: **2255268008**

Date Collected: 8/17/2017 09:05

Matrix: Solid

Sample ID: **SB-17(19.5-20.0')**

Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.1 U	U	ug/kg	11.1	3.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
alpha-BHC	11.1 U	U	ug/kg	11.1	0.98	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
beta-BHC	11.1 U	U	ug/kg	11.1	1.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
delta-BHC	11.1 U	U	ug/kg	11.1	0.85	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
gamma-BHC	11.1 U	U	ug/kg	11.1	0.92	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
alpha-Chlordane	11.1 U	U	ug/kg	11.1	1.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
gamma-Chlordane	11.1 U	U	ug/kg	11.1	1.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
4,4'-DDD	4.8J	J	ug/kg	21.6	1.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
4,4'-DDE	21.6 U	U	ug/kg	21.6	2.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
4,4'-DDT	5.7J	J	ug/kg	21.6	2.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Dieldrin	21.6 U	U	ug/kg	21.6	2.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Endosulfan I	11.1 U	U	ug/kg	11.1	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Endosulfan II	21.6 U	U	ug/kg	21.6	4.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Endosulfan Sulfate	21.6 U	U	ug/kg	21.6	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Endrin	21.6 U	U	ug/kg	21.6	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Endrin Aldehyde	21.6 U	U	ug/kg	21.6	2.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Endrin Ketone	21.6 U	U	ug/kg	21.6	3.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Heptachlor	11.1 U	U	ug/kg	11.1	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Heptachlor Epoxide	11.1 U	U	ug/kg	11.1	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Methoxychlor	21.6 U	U	ug/kg	21.6	2.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Toxaphene	229 U	U	ug/kg	229	37.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	82		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
Tetrachloro-m-xylene (S)	72.2		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:16	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	27.9		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	72.1		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	7.0		mg/kg	2.0	0.68	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:45	ZMC	A1
Lead, Total	16.9		mg/kg	1.4	0.45	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:45	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255268 ERM147|JEFFERSON COUNTY WV

Lab ID: **2255268008**

Date Collected: 8/17/2017 09:05

Matrix: Solid

Sample ID: **SB-17(19.5-20.0')**

Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

Project Coordinator

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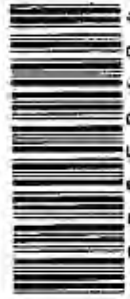


34 Dogwood Lane  
Middletown, PA 17057  
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F. 717-944-1430

CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page \_\_\_\_\_ of \_\_\_\_\_  
 Counter: \_\_\_\_\_  
 Tracking #: \_\_\_\_\_



\* 2 2 5 5 2 6 8 \*

<b>Co. Name:</b> ERM <b>Contact (person to):</b> DAVE CONNELLY <b>Address:</b> 204 CHAVIS DRIVE HURRICANE, WV, 25526		<b>Phone:</b> 3047574777		<b>Project Name/ID:</b>		<b>ALS Quote #:</b>	
<b>Bill to (if different than Report to):</b>				<b>PO#:</b>			
<b>Project Name/ID:</b>				<b>ALS Quote #:</b>			
<b>TAT:</b> <input checked="" type="checkbox"/> Normal Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.				<b>Approved By:</b>			
<b>Email?</b> <input type="checkbox"/> <b>Fax?</b> <input type="checkbox"/>				<b>Sample Description/Location</b> <small>(as it will appear on the lab report)</small>			
<b>Sample</b>		<b>Description/Location</b>		<b>COC Comments</b>		<b>Sample Data</b>	
1 SB-17 (0.5'-10.5')		HOLD				8/17/17 0845	
2 SB-17 (0.5'-10.5')		HOLD				8/17/17 0847	
3 SB-17 (1.0'-1.5')		HOLD				8/17/17 0849	
4 SB-17 (1.5'-20')		HOLD				8/17/17 0851	
5 SB-17 (4.5'-5.0')		HOLD				8/17/17 0853	
6 SB-17 (9.5'-10.0')		HOLD				8/17/17 0855	
7 SB-17 (14.5'-15.0')		HOLD				8/17/17 0900	
8 SB-17 (19.5'-20.0')		HOLD				8/17/17 0905	
<b>Project Comments:</b>							
<b>SAMPLED BY (Please Print):</b> Ryan Baider							
<b>Relinquished By / Company Name</b>		<b>Date</b>		<b>Time</b>		<b>Received By / Company Name</b>	
1 Ryan Baider		8/18/17		0800		2 ALS Baider	
3 ALS Baider		8-18		1539		4 gpm ALS	
5						6	
7						8	
9						10	

ANALYSES/METHOD REQUESTED																																																																																																			
Residues 80819 Arsenic + Lead 60108																																																																																																			
Enter Number of Containers Per Analysis																																																																																																			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">GFC</td> <td style="width:10%;">Matrix</td> <td colspan="8"></td> </tr> <tr> <td>1</td> <td>5</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>2</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>3</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>4</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>5</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>6</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>7</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> <tr> <td>8</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>1</td> </tr> </table>										GFC	Matrix									1	5	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1	1	6	1	1	1	1	1	1	1	1	1	7	1	1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1
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Data Deliverables		SOWA		State Samples	
<input type="checkbox"/> Standard	<input type="checkbox"/> CLP-like	Form 7-2	Form 7-3	Collected in?	MD
<input type="checkbox"/> NJ-Reduced	<input type="checkbox"/> NJ-Full	yes	yes		NJ
<input type="checkbox"/> NJ-Full	<input type="checkbox"/> NJ-Full	yes	yes		NY
<input type="checkbox"/> NJ-Full	<input type="checkbox"/> NJ-Full	yes	yes		PA
If yes, format type:		Other			
EHS		EHS			
DOO Criteria Required?		DOO Criteria Required?			

ALS FIELD SERVICES	
<input type="checkbox"/> Pickup	<input type="checkbox"/> Labor
<input type="checkbox"/> Composite Sampling	<input type="checkbox"/> Rental Equipment
<input type="checkbox"/> Other:	

Container	
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Container Type	Container Size
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Q=Grub; C=Composile	**Masks: A=Air; D=Drinking Water; G=Groundwater; O=Oil; Q=Other Liquid; S=Sludge; SO=Soil; WP=Wipe; WW=Wastewater	Rev 01-26-13
Container Type: AG=Amber Glass; CG=Clear Glass; PL=Plastic. Container Size: 250ml, 500ml, 1L. Box, etc. Preservative: HCl, HNO3, NaOH, etc.	***Comeliner Type: AG=Amber Glass; CG=Clear Glass; PL=Plastic. Container Size: 250ml, 500ml, 1L. Box, etc. Preservative: HCl, HNO3, NaOH, etc.	Rev 01-26-13



August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:33:24 PM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2255269</b>
Purchase Order:		Workorder ID:	<b>ERM148 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

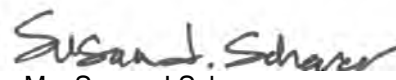
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*



Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255269001	SB-29(9.5-10.0')	Solid	8/17/2017 11:18	8/18/2017 15:29	Collected by Client
2255269002	SB-29(14.5-15.0')	Other	8/17/2017 11:23	8/18/2017 15:29	Collected by Client
2255269003	SB-29(19.5-20.0')	Other	8/17/2017 11:28	8/18/2017 15:29	Collected by Client
2255269004	SB-29(24.5-25.0')	Solid	8/17/2017 11:33	8/18/2017 15:29	Collected by Client
2255269005	TB-2	Water	8/18/2017 15:29	8/18/2017 15:29	Collected by Client
2255269006	SB-27(0-0.5')	Solid	8/17/2017 12:55	8/18/2017 15:29	Collected by Client
2255269007	SB-27(0.5-1.0')	Other	8/17/2017 12:57	8/18/2017 15:29	Collected by Client
2255269008	SB-27(1.0-1.5')	Other	8/17/2017 12:59	8/18/2017 15:29	Collected by Client
2255269009	SB-21(1.5-2.0')	Solid	8/17/2017 16:26	8/18/2017 15:29	Collected by Client
2255269010	SB-21(4.5-5.0')	Solid	8/17/2017 16:28	8/29/2017 11:34	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2255269001**Sample ID:** SB-29(9.5-10.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255269004**Sample ID:** SB-29(24.5-25.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255269006**Sample ID:** SB-27(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255269009**Sample ID:** SB-21(1.5-2.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255269010**Sample ID:** SB-21(4.5-5.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269001**  
Sample ID: **SB-29(9.5-10.0')**

Date Collected: 8/17/2017 11:18 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PETROLEUM HC's</b>										
Diesel Range Organics C10-C28	13.3 U	U	mg/kg	13.3	3.1	SW846 8015D	8/24/17 13:25 JTH	8/25/17 17:23	BS	E
Gasoline Range Organics	11600 U	U	ug/kg	11600	1620	SW846 8015D	8/17/17 11:18 DD	8/23/17 14:20	DD	I
Oil Range Organics C28-C35	13.3 U	U,1	mg/kg	13.3	2.8	SW846 8015D	8/24/17 13:25 JTH	8/25/17 17:23	BS	E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
a,a,a-Trifluorotoluene (S)	124		%	72 - 134		SW846 8015D	8/17/17 11:18 DD	8/23/17 14:20	DD	I
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
o-Terphenyl (S)	52.9		%	38 - 118		SW846 8015D	8/24/17 13:25 JTH	8/25/17 17:23	BS	E
<b>VOLATILE ORGANICS</b>										
Benzene	2.5 U	U	ug/kg	2.5	0.61	SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
Ethylbenzene	2.5 U	U	ug/kg	2.5	0.83	SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
Toluene	2.5 U	U	ug/kg	2.5	0.82	SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
Total Xylenes	7.4 U	U	ug/kg	7.4	1.7	SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	97.1		%	56 - 124		SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
4-Bromofluorobenzene (S)	99.6		%	51 - 128		SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
Dibromofluoromethane (S)	105		%	62 - 123		SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
Toluene-d8 (S)	104		%	59 - 131		SW846 8260B	8/17/17 11:18 TMP	8/22/17 19:44	TMP	A
<b>SEMIVOLATILES</b>										
Acenaphthene	64.7 U	U	ug/kg	64.7	7.8	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Acenaphthylene	64.7 U	U	ug/kg	64.7	9.1	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Anthracene	64.7 U	U	ug/kg	64.7	10.3	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Benzo(a)anthracene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Benzo(a)pyrene	64.7 U	U	ug/kg	64.7	5.2	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Benzo(b)fluoranthene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Benzo(g,h,i)perylene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Benzo(k)fluoranthene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Chrysene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Dibenzo(a,h)anthracene	64.7 U	U	ug/kg	64.7	7.8	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Fluoranthene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Fluorene	64.7 U	U	ug/kg	64.7	7.8	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Indeno(1,2,3-cd)pyrene	64.7 U	U	ug/kg	64.7	9.1	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Naphthalene	64.7 U	U	ug/kg	64.7	7.8	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Phenanthrene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E
Pyrene	64.7 U	U	ug/kg	64.7	6.5	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:21	DHF	E

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269001**  
Sample ID: **SB-29(9.5-10.0')**

Date Collected: 8/17/2017 11:18 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Fluorobiphenyl (S)	63.5		%	40 - 110		SW846 8270D	8/22/17 14:30	JTH	8/22/17 23:21	DHF E
Nitrobenzene-d5 (S)	69.3		%	38 - 112		SW846 8270D	8/22/17 14:30	JTH	8/22/17 23:21	DHF E
Terphenyl-d14 (S)	78.8		%	45 - 126		SW846 8270D	8/22/17 14:30	JTH	8/22/17 23:21	DHF E
<b>PESTICIDES</b>										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
alpha-BHC	10.8 U	U	ug/kg	10.8	0.95	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
delta-BHC	10.8 U	U	ug/kg	10.8	0.82	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
4,4'-DDD	20.9 U	U	ug/kg	20.9	1.7	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
4,4'-DDE	20.9 U	U	ug/kg	20.9	2.9	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
4,4'-DDT	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Dieldrin	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Endosulfan II	20.9 U	U	ug/kg	20.9	4.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Endosulfan Sulfate	20.9 U	U	ug/kg	20.9	1.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Endrin	20.9 U	U	ug/kg	20.9	1.5	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Endrin Aldehyde	20.9 U	U	ug/kg	20.9	2.3	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Endrin Ketone	20.9 U	U	ug/kg	20.9	2.9	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Methoxychlor	20.9 U	U	ug/kg	20.9	2.8	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Toxaphene	222 U	U	ug/kg	222	36.8	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	91.7		%	30 - 135		SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
Tetrachloro-m-xylene (S)	76.2		%	30 - 111		SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:08	RWS E
<b>WET CHEMISTRY</b>										
Moisture	25.2		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
Total Solids	74.8		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
<b>METALS</b>										
Arsenic, Total	10.1		mg/kg	1.8	0.60	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:07	ZMC E1
Lead, Total	19.6		mg/kg	1.2	0.39	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:07	ZMC E1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269001**  
Sample ID: **SB-29(9.5-10.0')**

Date Collected: 8/17/2017 11:18 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269004**

Date Collected: 8/17/2017 11:33

Matrix: Solid

Sample ID: **SB-29(24.5-25.0')**

Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PETROLEUM HC's</b>										
Diesel Range Organics C10-C28	16.2 U	U	mg/kg	16.2	3.8	SW846 8015D	8/24/17 13:25 JTH	8/25/17 18:35	BS	E
Gasoline Range Organics	15500 U	U	ug/kg	15500	2150	SW846 8015D	8/17/17 11:33 DD	8/23/17 14:53	DD	I
Oil Range Organics C28-C35	16.2 U	U,1	mg/kg	16.2	3.4	SW846 8015D	8/24/17 13:25 JTH	8/25/17 18:35	BS	E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
a,a,a-Trifluorotoluene (S)	125		%	72 - 134		SW846 8015D	8/17/17 11:33 DD	8/23/17 14:53	DD	I
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
o-Terphenyl (S)	58		%	38 - 118		SW846 8015D	8/24/17 13:25 JTH	8/25/17 18:35	BS	E
<b>VOLATILE ORGANICS</b>										
Benzene	3.0 U	U	ug/kg	3.0	0.74	SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
Ethylbenzene	3.0 U	U	ug/kg	3.0	1.0	SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
Toluene	3.0 U	U	ug/kg	3.0	1.0	SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
Total Xylenes	8.9 U	U	ug/kg	8.9	2.1	SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.1		%	56 - 124		SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
4-Bromofluorobenzene (S)	99.9		%	51 - 128		SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
Dibromofluoromethane (S)	105		%	62 - 123		SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
Toluene-d8 (S)	104		%	59 - 131		SW846 8260B	8/17/17 11:33 TMP	8/22/17 20:07	TMP	A
<b>SEMIVOLATILES</b>										
Acenaphthene	74.4 U	U	ug/kg	74.4	8.9	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Acenaphthylene	74.4 U	U	ug/kg	74.4	10.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Anthracene	74.4 U	U	ug/kg	74.4	11.9	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Benzo(a)anthracene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Benzo(a)pyrene	74.4 U	U	ug/kg	74.4	5.9	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Benzo(b)fluoranthene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Benzo(g,h,i)perylene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Benzo(k)fluoranthene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Chrysene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Dibenzo(a,h)anthracene	74.4 U	U	ug/kg	74.4	8.9	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Fluoranthene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Fluorene	74.4 U	U	ug/kg	74.4	8.9	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Indeno(1,2,3-cd)pyrene	74.4 U	U	ug/kg	74.4	10.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Naphthalene	74.4 U	U	ug/kg	74.4	8.9	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Phenanthrene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E
Pyrene	74.4 U	U	ug/kg	74.4	7.4	SW846 8270D	8/22/17 14:30 JTH	8/22/17 23:48	DHF	E

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269004**

Date Collected: 8/17/2017 11:33

Matrix: Solid

Sample ID: **SB-29(24.5-25.0')**

Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Fluorobiphenyl (S)	66.1		%	40 - 110		SW846 8270D	8/22/17 14:30	JTH	8/22/17 23:48	DHF E
Nitrobenzene-d5 (S)	69.6		%	38 - 112		SW846 8270D	8/22/17 14:30	JTH	8/22/17 23:48	DHF E
Terphenyl-d14 (S)	83.2		%	45 - 126		SW846 8270D	8/22/17 14:30	JTH	8/22/17 23:48	DHF E
<b>PESTICIDES</b>										
Aldrin	12.9 U	U	ug/kg	12.9	4.2	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
alpha-BHC	12.9 U	U	ug/kg	12.9	1.1	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
beta-BHC	12.9 U	U	ug/kg	12.9	1.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
delta-BHC	12.9 U	U	ug/kg	12.9	0.99	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
gamma-BHC	12.9 U	U	ug/kg	12.9	1.1	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
alpha-Chlordane	12.9 U	U	ug/kg	12.9	1.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
gamma-Chlordane	12.9 U	U	ug/kg	12.9	2.2	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
4,4'-DDD	25.0 U	U	ug/kg	25.0	2.0	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
4,4'-DDE	25.0 U	U	ug/kg	25.0	3.4	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
4,4'-DDT	25.0 U	U	ug/kg	25.0	2.9	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Dieldrin	25.0 U	U	ug/kg	25.0	2.9	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Endosulfan I	12.9 U	U	ug/kg	12.9	1.6	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Endosulfan II	25.0 U	U	ug/kg	25.0	5.2	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Endosulfan Sulfate	25.0 U	U	ug/kg	25.0	1.7	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Endrin	25.0 U	U	ug/kg	25.0	1.8	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Endrin Aldehyde	25.0 U	U	ug/kg	25.0	2.7	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Endrin Ketone	25.0 U	U	ug/kg	25.0	3.5	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Heptachlor	12.9 U	U	ug/kg	12.9	1.3	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Heptachlor Epoxide	12.9 U	U	ug/kg	12.9	1.3	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Methoxychlor	25.0 U	U	ug/kg	25.0	3.3	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Toxaphene	265 U	U	ug/kg	265	44.0	SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	58.6		%	30 - 135		SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
Tetrachloro-m-xylene (S)	62.5		%	30 - 111		SW846 8081B	8/21/17 17:00	JSR	8/24/17 23:24	RWS E
<b>WET CHEMISTRY</b>										
Moisture	34.9		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
Total Solids	65.1		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
<b>METALS</b>										
Arsenic, Total	9.4		mg/kg	2.3	0.75	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:11	ZMC E1
Lead, Total	12.7		mg/kg	1.5	0.50	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:11	ZMC E1

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269004**

Date Collected: 8/17/2017 11:33

Matrix: Solid

Sample ID: **SB-29(24.5-25.0')**

Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

Project Coordinator

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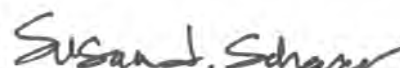
## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269005**  
Sample ID: **TB-2**

Date Collected: 8/18/2017 15:29 Matrix: Water  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
Benzene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/24/17 22:52	CJG	A
Ethylbenzene	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/24/17 22:52	CJG	A
Toluene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/24/17 22:52	CJG	A
Total Xylenes	3.0 U	U	ug/L	3.0	0.66	SW846 8260B		8/24/17 22:52	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	105		%	62 - 133		SW846 8260B		8/24/17 22:52	CJG	A
4-Bromofluorobenzene (S)	108		%	79 - 114		SW846 8260B		8/24/17 22:52	CJG	A
Dibromofluoromethane (S)	95.7		%	78 - 116		SW846 8260B		8/24/17 22:52	CJG	A
Toluene-d8 (S)	110		%	76 - 127		SW846 8260B		8/24/17 22:52	CJG	A

  
Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269006**  
Sample ID: **SB-27(0-0.5')**

Date Collected: 8/17/2017 12:55 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
4,4'-DDD	5.5J	J	ug/kg	19.8	1.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
4,4'-DDE	125		ug/kg	19.8	2.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
4,4'-DDT	48.0		ug/kg	19.8	2.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Dieldrin	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Endosulfan II	19.8 U	U	ug/kg	19.8	4.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Endosulfan Sulfate	19.8 U	U	ug/kg	19.8	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Endrin	19.8 U	U	ug/kg	19.8	1.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Endrin Ketone	19.8 U	U	ug/kg	19.8	2.8	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Toxaphene	210 U	U	ug/kg	210	34.9	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	39.5		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
Tetrachloro-m-xylene (S)	37.2		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:39 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	20.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	79.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	16.7		mg/kg	1.6	0.52	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:15	ZMC	A1
Lead, Total	63.3		mg/kg	1.0	0.35	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:15	ZMC	A1

### ALS Environmental Laboratory Locations Across North America

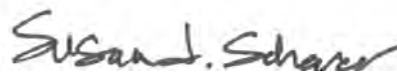
Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
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**ANALYTICAL RESULTS**

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269006**  
Sample ID: **SB-27(0-0.5')**Date Collected: 8/17/2017 12:55 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator**ALS Environmental Laboratory Locations Across North America**Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269009**  
Sample ID: **SB-21(1.5-2.0')**

Date Collected: 8/17/2017 16:26 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
4,4'-DDD	19.8 U	U	ug/kg	19.8	1.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
4,4'-DDE	19.8 U	U	ug/kg	19.8	2.7	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
4,4'-DDT	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Dieldrin	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Endosulfan II	19.8 U	U	ug/kg	19.8	4.1	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Endosulfan Sulfate	19.8 U	U	ug/kg	19.8	1.3	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Endrin	19.8 U	U	ug/kg	19.8	1.4	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Endrin Ketone	19.8 U	U	ug/kg	19.8	2.8	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Toxaphene	210 U	U	ug/kg	210	34.8	SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	73.9		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
Tetrachloro-m-xylene (S)	68.7		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/24/17 23:55	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	18.3		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	81.7		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	8.7		mg/kg	1.8	0.59	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:19	ZMC	A1
Lead, Total	16.7		mg/kg	1.2	0.39	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:19	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269009**  
Sample ID: **SB-21(1.5-2.0')**

Date Collected: 8/17/2017 16:26 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269010** Date Collected: 8/17/2017 16:28 Matrix: Solid  
Sample ID: **SB-21(4.5-5.0')** Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.92	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.86	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
4,4'-DDD	20.3 U	U	ug/kg	20.3	1.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
4,4'-DDE	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
4,4'-DDT	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Dieldrin	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Endosulfan II	20.3 U	U	ug/kg	20.3	4.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Endosulfan Sulfate	20.3 U	U	ug/kg	20.3	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Endrin	20.3 U	U	ug/kg	20.3	1.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Endrin Aldehyde	20.3 U	U	ug/kg	20.3	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Endrin Ketone	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Methoxychlor	20.3 U	U	ug/kg	20.3	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Toxaphene	215 U	U	ug/kg	215	35.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	88.6		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
Tetrachloro-m-xylene (S)	79.9		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:35	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	19.7		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	80.3		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	7.5		mg/kg	1.8	0.60	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:48	ZMC	A1
Lead, Total	13.0		mg/kg	1.2	0.40	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:48	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255269 ERM148|JEFFERSON COUNTY WV

Lab ID: **2255269010**  
Sample ID: **SB-21(4.5-5.0')**

Date Collected: 8/17/2017 16:28 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2255269001</b>	1	SB-29(9.5-10.0')	SW846 8015D	Oil Range Organics C28-C35
The ALS Middletown Laboratory is not NELAP accredited for Oil Range Organics by method EPA 8015D.				
<b>2255269004</b>	1	SB-29(24.5-25.0')	SW846 8015D	Oil Range Organics C28-C35
The ALS Middletown Laboratory is not NELAP accredited for Oil Range Organics by method EPA 8015D.				

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Middletown, PA 17057  
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**Environmental**

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Page 1 of 2

Courier:

Tracking #: \_\_\_\_\_

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

Co. Name: **DAVE CONNELLY**

Contact (Report to): **ERN**

Address: **204 CHASE DRIVE**

Phone: **304 7574777**

Container Type	CG	WAL
Container Size	8oz	ADMI
Preservative	---	---

## ANALYSIS METHOD REQUESTED

Residues 80814	Asbestos + LEAD 6104	STEX 8260	TPH DRO, ORO, 6220	PAH 8220
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Bill to (different than Report to): **PO#:** \_\_\_\_\_

Project Name/ID: \_\_\_\_\_ ALS Quote #: \_\_\_\_\_

TAT: ☒ Normal-Standard TAT is 10-12 business days.  
☐ Rush-Subject to ALS approval and surcharges.

Email? ☐ Y ☐ N

Fax? ☐ Y ☐ N

Sample	Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	Enter Number of Containers Per Analysis
1	SB-29 (9.5'-10.0')		8/17/17	1118	6
2	SB-29 (14.5'-15.0')	HOLD	8/17/17	1123	6
3	SB-29 (19.5'-20.0')	HOLD	8/17/17	1128	6
4	SB-29 (24.5'-25.0')		8/17/17	1133	6
5	TB-2		LAD		
6	SB-27 (0'-0.5')		8/17/17	1255	6
7	SB-27 (0.5'-1.0')	HOLD	8/17/17	1257	6
8	SB-27 (1.0'-1.5')	HOLD	8/17/17	1259	6

Project Comments:

SAMPLED BY (Please Print): **Ryan Barber**

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<b>Ryan Barber</b>	8/18/17	0800	<b>ALS Barber</b>	8/18/17	0800
<b>ALS Barber</b>	8/18/17	1529	<b>gml ALS</b>	8/18/17	1529

Standard	<input type="checkbox"/>	CLP-like	<input type="checkbox"/>	NI-Reduced	<input type="checkbox"/>	NI-Full	<input type="checkbox"/>
State Samples Collected In?	MD <input type="checkbox"/>	AL <input type="checkbox"/>	NY <input type="checkbox"/>	PA <input type="checkbox"/>			
ALS FIELD SERVICES	<input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment <input type="checkbox"/> Other: _____						

Notes: \_\_\_\_\_

Thurs, 8/31/17 3:34:24 PM

Page 19 of 20

ALS







August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:33:39 PM - See workorder comment section for explanation

Project Name: <b>2017-JEFFERSON COUNTY</b>	Workorder: <b>2255272</b>
Purchase Order:	Workorder ID: <b>ERM149 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

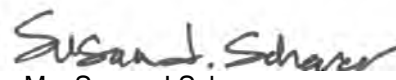
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

  
Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255272001	SB-19(1.0-1.5')	Other	8/17/2017 10:31	8/18/2017 15:29	Collected by Client
2255272002	SB-19(1.5-2.0')	Solid	8/17/2017 10:33	8/18/2017 15:29	Collected by Client
2255272003	SB-19(4.5-5.0')	Solid	8/17/2017 10:35	8/29/2017 11:34	Collected by Client
2255272004	SB-29(0.0-5')	Solid	8/17/2017 11:05	8/18/2017 15:29	Collected by Client
2255272005	SB-29(0.5-1.0')	Other	8/17/2017 11:07	8/18/2017 15:29	Collected by Client
2255272006	SB-29(1.0-1.5')	Other	8/17/2017 11:09	8/18/2017 15:29	Collected by Client
2255272007	SB-29(1.5-2.0')	Solid	8/17/2017 11:11	8/18/2017 15:29	Collected by Client
2255272008	SB-29(4.5-5.0')	Solid	8/17/2017 11:13	8/18/2017 15:29	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2255272002      **Sample ID:** SB-19(1.5-2.0')      **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255272003      **Sample ID:** SB-19(4.5-5.0')      **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255272004      **Sample ID:** SB-29(0-0.5')      **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255272007      **Sample ID:** SB-29(1.5-2.0')      **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255272008      **Sample ID:** SB-29(4.5-5.0')      **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272002**  
Sample ID: **SB-19(1.5-2.0')**

Date Collected: 8/17/2017 10:33 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.4 U	U	ug/kg	10.4	3.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
alpha-BHC	10.4 U	U	ug/kg	10.4	0.92	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
beta-BHC	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
delta-BHC	10.4 U	U	ug/kg	10.4	0.80	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
gamma-BHC	10.4 U	U	ug/kg	10.4	0.86	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
alpha-Chlordane	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
gamma-Chlordane	10.4 U	U	ug/kg	10.4	1.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
4,4'-DDD	20.2 U	U	ug/kg	20.2	1.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
4,4'-DDE	20.2 U	U	ug/kg	20.2	2.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
4,4'-DDT	20.2 U	U	ug/kg	20.2	2.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Dieldrin	20.2 U	U	ug/kg	20.2	2.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Endosulfan I	10.4 U	U	ug/kg	10.4	1.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Endosulfan II	20.2 U	U	ug/kg	20.2	4.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Endosulfan Sulfate	20.2 U	U	ug/kg	20.2	1.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Endrin	20.2 U	U	ug/kg	20.2	1.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Endrin Aldehyde	20.2 U	U	ug/kg	20.2	2.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Endrin Ketone	20.2 U	U	ug/kg	20.2	2.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Heptachlor	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Heptachlor Epoxide	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Methoxychlor	20.2 U	U	ug/kg	20.2	2.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Toxaphene	214 U	U	ug/kg	214	35.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	70.7		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
Tetrachloro-m-xylene (S)	62.5		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 00:11 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	20.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	79.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	7.5		mg/kg	1.7	0.58	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:23	ZMC	A1
Lead, Total	13.6		mg/kg	1.2	0.38	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:23	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272002**  
Sample ID: **SB-19(1.5-2.0')**

Date Collected: 8/17/2017 10:33 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272003**  
Sample ID: **SB-19(4.5-5.0')**

Date Collected: 8/17/2017 10:35 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.3 U	U	ug/kg	10.3	3.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
alpha-BHC	10.3 U	U	ug/kg	10.3	0.91	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
beta-BHC	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
delta-BHC	10.3 U	U	ug/kg	10.3	0.79	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
gamma-BHC	10.3 U	U	ug/kg	10.3	0.85	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
alpha-Chlordane	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
gamma-Chlordane	10.3 U	U	ug/kg	10.3	1.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
4,4'-DDD	19.9 U	U	ug/kg	19.9	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
4,4'-DDE	19.9 U	U	ug/kg	19.9	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
4,4'-DDT	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Dieldrin	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Endosulfan I	10.3 U	U	ug/kg	10.3	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Endosulfan II	19.9 U	U	ug/kg	19.9	4.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Endosulfan Sulfate	19.9 U	U	ug/kg	19.9	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Endrin	19.9 U	U	ug/kg	19.9	1.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Endrin Aldehyde	19.9 U	U	ug/kg	19.9	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Endrin Ketone	19.9 U	U	ug/kg	19.9	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Heptachlor	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Heptachlor Epoxide	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Methoxychlor	19.9 U	U	ug/kg	19.9	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Toxaphene	211 U	U	ug/kg	211	35.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	88.3		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
Tetrachloro-m-xylene (S)	73.8		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:48 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	19.9		%	0.1	0.01	S2540G-11		8/30/17 09:28 AXD	A	
Total Solids	80.1		%	0.1	0.01	S2540G-11		8/30/17 09:28 AXD	A	
<b>METALS</b>										
Arsenic, Total	8.3		mg/kg	1.8	0.59	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:52 ZMC	A1	
Lead, Total	16.2		mg/kg	1.2	0.39	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:52 ZMC	A1	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272003**  
Sample ID: **SB-19(4.5-5.0')**

Date Collected: 8/17/2017 10:35 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272004**  
Sample ID: **SB-29(0-0.5')**

Date Collected: 8/17/2017 11:05 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PETROLEUM HC's</b>										
Diesel Range Organics C10-C28	12.4 U	U	mg/kg	12.4	2.9	SW846 8015D	8/24/17 13:25 JTH	8/25/17 19:11	BS	E
Gasoline Range Organics	9710 U	U	ug/kg	9710	1350	SW846 8015D	8/17/17 11:05 DD	8/23/17 15:25	DD	I
Oil Range Organics C28-C35	12.4 U	U,1	mg/kg	12.4	2.6	SW846 8015D	8/24/17 13:25 JTH	8/25/17 19:11	BS	E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
a,a,a-Trifluorotoluene (S)	125		%	72 - 134		SW846 8015D	8/17/17 11:05 DD	8/23/17 15:25	DD	I
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
o-Terphenyl (S)	63.8		%	38 - 118		SW846 8015D	8/24/17 13:25 JTH	8/25/17 19:11	BS	E
<b>VOLATILE ORGANICS</b>										
Benzene	2.3 U	U	ug/kg	2.3	0.57	SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
Ethylbenzene	2.3 U	U	ug/kg	2.3	0.77	SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
Toluene	2.3 U	U	ug/kg	2.3	0.76	SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
Total Xylenes	6.8 U	U	ug/kg	6.8	1.6	SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.1		%	56 - 124		SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
4-Bromofluorobenzene (S)	101		%	51 - 128		SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
Dibromofluoromethane (S)	106		%	62 - 123		SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
Toluene-d8 (S)	106		%	59 - 131		SW846 8260B	8/17/17 11:05 TMP	8/22/17 20:31	TMP	A
<b>SEMIVOLATILES</b>										
Acenaphthene	59.9 U	U	ug/kg	59.9	7.2	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Acenaphthylene	13.6J	J	ug/kg	59.9	8.4	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Anthracene	59.9 U	U	ug/kg	59.9	9.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Benzo(a)anthracene	54.1J	J	ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Benzo(a)pyrene	82.7		ug/kg	59.9	4.8	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Benzo(b)fluoranthene	167		ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Benzo(g,h,i)perylene	94.6		ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Benzo(k)fluoranthene	60.3		ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Chrysene	96.7		ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Dibenzo(a,h)anthracene	13.6J	J	ug/kg	59.9	7.2	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Fluoranthene	84.5		ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Fluorene	59.9 U	U	ug/kg	59.9	7.2	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Indeno(1,2,3-cd)pyrene	87.8		ug/kg	59.9	8.4	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Naphthalene	59.9 U	U	ug/kg	59.9	7.2	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Phenanthrene	21.1J	J	ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E
Pyrene	91.8		ug/kg	59.9	6.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:15	DHF	E

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272004**  
Sample ID: **SB-29(0-0.5')**

Date Collected: 8/17/2017 11:05 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Fluorobiphenyl (S)	74.1		%	40 - 110		SW846 8270D	8/22/17 14:30	JTH	8/23/17 00:15	DHF E
Nitrobenzene-d5 (S)	74.6		%	38 - 112		SW846 8270D	8/22/17 14:30	JTH	8/23/17 00:15	DHF E
Terphenyl-d14 (S)	86.1		%	45 - 126		SW846 8270D	8/22/17 14:30	JTH	8/23/17 00:15	DHF E
<b>PESTICIDES</b>										
Aldrin	9.6 U	U	ug/kg	9.6	3.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
alpha-BHC	9.6 U	U	ug/kg	9.6	0.85	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
beta-BHC	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
delta-BHC	9.6 U	U	ug/kg	9.6	0.73	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
gamma-BHC	9.6 U	U	ug/kg	9.6	0.79	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
alpha-Chlordane	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
gamma-Chlordane	9.6 U	U	ug/kg	9.6	1.6	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
4,4'-DDD	18.6 U	U	ug/kg	18.6	1.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
4,4'-DDE	18.6 U	U	ug/kg	18.6	2.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
4,4'-DDT	18.6 U	U	ug/kg	18.6	2.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Dieldrin	18.6 U	U	ug/kg	18.6	2.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Endosulfan I	9.6 U	U	ug/kg	9.6	1.2	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Endosulfan II	18.6 U	U	ug/kg	18.6	3.9	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Endosulfan Sulfate	18.6 U	U	ug/kg	18.6	1.2	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Endrin	18.6 U	U	ug/kg	18.6	1.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Endrin Aldehyde	18.6 U	U	ug/kg	18.6	2.0	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Endrin Ketone	18.6 U	U	ug/kg	18.6	2.6	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Heptachlor	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Heptachlor Epoxide	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Methoxychlor	18.6 U	U	ug/kg	18.6	2.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Toxaphene	198 U	U	ug/kg	198	32.8	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	54.1		%	30 - 135		SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
Tetrachloro-m-xylene (S)	47.8		%	30 - 111		SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:27	RWS E
<b>WET CHEMISTRY</b>										
Moisture	17.0		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
Total Solids	83.0		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
<b>METALS</b>										
Arsenic, Total	7.9		mg/kg	1.6	0.54	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:26	ZMC E1
Lead, Total	16.9		mg/kg	1.1	0.36	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:26	ZMC E1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272004**  
Sample ID: **SB-29(0-0.5')**

Date Collected: 8/17/2017 11:05 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272007**  
Sample ID: **SB-29(1.5-2.0')**

Date Collected: 8/17/2017 11:11 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PETROLEUM HC's</b>										
Diesel Range Organics C10-C28	13.6 U	U	mg/kg	13.6	3.2	SW846 8015D	8/24/17 13:25 JTH	8/25/17 19:46	BS	E
Gasoline Range Organics	10400 U	U	ug/kg	10400	1440	SW846 8015D	8/17/17 11:11 DD	8/23/17 15:57	DD	I
Oil Range Organics C28-C35	13.6 U	U,1	mg/kg	13.6	2.8	SW846 8015D	8/24/17 13:25 JTH	8/25/17 19:46	BS	E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
a,a,a-Trifluorotoluene (S)	124		%	72 - 134		SW846 8015D	8/17/17 11:11 DD	8/23/17 15:57	DD	I
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
o-Terphenyl (S)	54		%	38 - 118		SW846 8015D	8/24/17 13:25 JTH	8/25/17 19:46	BS	E
<b>VOLATILE ORGANICS</b>										
Benzene	2.3 U	U	ug/kg	2.3	0.56	SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
Ethylbenzene	2.3 U	U	ug/kg	2.3	0.77	SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
Toluene	2.3 U	U	ug/kg	2.3	0.76	SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
Total Xylenes	6.8 U	U	ug/kg	6.8	1.6	SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.9		%	56 - 124		SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
4-Bromofluorobenzene (S)	101		%	51 - 128		SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
Dibromofluoromethane (S)	105		%	62 - 123		SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
Toluene-d8 (S)	105		%	59 - 131		SW846 8260B	8/17/17 11:11 TMP	8/22/17 20:54	TMP	A
<b>SEMIVOLATILES</b>										
Acenaphthene	66.3 U	U	ug/kg	66.3	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Acenaphthylene	66.3 U	U	ug/kg	66.3	9.3	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Anthracene	66.3 U	U	ug/kg	66.3	10.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Benzo(a)anthracene	20.1J	J	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Benzo(a)pyrene	66.3 U	U	ug/kg	66.3	5.3	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Benzo(b)fluoranthene	66.3 U	U	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Benzo(g,h,i)perylene	66.3 U	U	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Benzo(k)fluoranthene	66.3 U	U	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Chrysene	66.3 U	U	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Dibenzo(a,h)anthracene	66.3 U	U	ug/kg	66.3	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Fluoranthene	20.9J	J	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Fluorene	66.3 U	U	ug/kg	66.3	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Indeno(1,2,3-cd)pyrene	66.3 U	U	ug/kg	66.3	9.3	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Naphthalene	66.3 U	U	ug/kg	66.3	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Phenanthrene	12.3J	J	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E
Pyrene	29.3J	J	ug/kg	66.3	6.6	SW846 8270D	8/22/17 14:30 JTH	8/23/17 00:42	DHF	E

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272007**  
Sample ID: **SB-29(1.5-2.0')**

Date Collected: 8/17/2017 11:11 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Fluorobiphenyl (S)	61.9		%	40 - 110		SW846 8270D	8/22/17 14:30	JTH	8/23/17 00:42	DHF E
Nitrobenzene-d5 (S)	69.6		%	38 - 112		SW846 8270D	8/22/17 14:30	JTH	8/23/17 00:42	DHF E
Terphenyl-d14 (S)	74.3		%	45 - 126		SW846 8270D	8/22/17 14:30	JTH	8/23/17 00:42	DHF E
<b>PESTICIDES</b>										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
alpha-BHC	10.8 U	U	ug/kg	10.8	0.95	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
delta-BHC	10.8 U	U	ug/kg	10.8	0.82	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
4,4'-DDD	20.9 U	U	ug/kg	20.9	1.7	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
4,4'-DDE	20.9 U	U	ug/kg	20.9	2.9	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
4,4'-DDT	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Dieldrin	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Endosulfan II	20.9 U	U	ug/kg	20.9	4.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Endosulfan Sulfate	20.9 U	U	ug/kg	20.9	1.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Endrin	20.9 U	U	ug/kg	20.9	1.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Endrin Aldehyde	20.9 U	U	ug/kg	20.9	2.3	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Endrin Ketone	20.9 U	U	ug/kg	20.9	2.9	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Methoxychlor	20.9 U	U	ug/kg	20.9	2.8	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Toxaphene	222 U	U	ug/kg	222	36.7	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	93.6		%	30 - 135		SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
Tetrachloro-m-xylene (S)	81.7		%	30 - 111		SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:42	RWS E
<b>WET CHEMISTRY</b>										
Moisture	25.5		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
Total Solids	74.5		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
<b>METALS</b>										
Arsenic, Total	9.8		mg/kg	1.9	0.62	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:42	ZMC E1
Lead, Total	12.5		mg/kg	1.2	0.41	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:42	ZMC E1

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272007**  
Sample ID: **SB-29(1.5-2.0')**

Date Collected: 8/17/2017 11:11 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272008**  
Sample ID: **SB-29(4.5-5.0')**

Date Collected: 8/17/2017 11:13 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PETROLEUM HC's</b>										
Diesel Range Organics C10-C28	14.2 U	U	mg/kg	14.2	3.4	SW846 8015D	8/24/17 13:25 JTH	8/25/17 20:22	BS	E
Gasoline Range Organics	11400 U	U	ug/kg	11400	1580	SW846 8015D	8/17/17 11:13 DD	8/23/17 16:30	DD	I
Oil Range Organics C28-C35	14.2 U	U,3	mg/kg	14.2	2.9	SW846 8015D	8/24/17 13:25 JTH	8/25/17 20:22	BS	E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
a,a,a-Trifluorotoluene (S)	126		%	72 - 134		SW846 8015D	8/17/17 11:13 DD	8/23/17 16:30	DD	I
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
o-Terphenyl (S)	62.4		%	38 - 118		SW846 8015D	8/24/17 13:25 JTH	8/25/17 20:22	BS	E
<b>VOLATILE ORGANICS</b>										
Benzene	2.3 U	U	ug/kg	2.3	0.58	SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
Ethylbenzene	2.3 U	U	ug/kg	2.3	0.78	SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
Toluene	2.3 U	U	ug/kg	2.3	0.77	SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
Total Xylenes	6.9 U	U	ug/kg	6.9	1.6	SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	97.9		%	56 - 124		SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
4-Bromofluorobenzene (S)	100		%	51 - 128		SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
Dibromofluoromethane (S)	107		%	62 - 123		SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
Toluene-d8 (S)	104		%	59 - 131		SW846 8260B	8/17/17 11:13 TMP	8/25/17 13:51	TMP	B
<b>SEMIVOLATILES</b>										
Acenaphthene	67.0 U	U	ug/kg	67.0	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Acenaphthylene	67.0 U	U	ug/kg	67.0	9.4	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Anthracene	67.0 U	U	ug/kg	67.0	10.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Benzo(a)anthracene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Benzo(a)pyrene	67.0 U	U	ug/kg	67.0	5.4	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Benzo(b)fluoranthene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Benzo(g,h,i)perylene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Benzo(k)fluoranthene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Chrysene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Dibenzo(a,h)anthracene	67.0 U	U	ug/kg	67.0	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Fluoranthene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Fluorene	67.0 U	U	ug/kg	67.0	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Indeno(1,2,3-cd)pyrene	67.0 U	U	ug/kg	67.0	9.4	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Naphthalene	67.0 U	U	ug/kg	67.0	8.0	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Phenanthrene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E
Pyrene	67.0 U	U	ug/kg	67.0	6.7	SW846 8270D	8/22/17 14:30 JTH	8/23/17 01:09	DHF	E

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## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272008**  
Sample ID: **SB-29(4.5-5.0')**

Date Collected: 8/17/2017 11:13 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Fluorobiphenyl (S)	58.7		%	40 - 110		SW846 8270D	8/22/17 14:30	JTH	8/23/17 01:09	DHF E
Nitrobenzene-d5 (S)	59.4		%	38 - 112		SW846 8270D	8/22/17 14:30	JTH	8/23/17 01:09	DHF E
Terphenyl-d14 (S)	71.9		%	45 - 126		SW846 8270D	8/22/17 14:30	JTH	8/23/17 01:09	DHF E
<b>PESTICIDES</b>										
Aldrin	11.2 U	U	ug/kg	11.2	3.6	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
alpha-BHC	11.2 U	U	ug/kg	11.2	0.99	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
beta-BHC	11.2 U	U	ug/kg	11.2	1.2	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
delta-BHC	11.2 U	U	ug/kg	11.2	0.86	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
gamma-BHC	11.2 U	U	ug/kg	11.2	0.93	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
alpha-Chlordane	11.2 U	U	ug/kg	11.2	1.2	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
gamma-Chlordane	11.2 U	U	ug/kg	11.2	1.9	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
4,4'-DDD	21.8 U	U	ug/kg	21.8	1.8	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
4,4'-DDE	21.8 U	U	ug/kg	21.8	3.0	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
4,4'-DDT	21.8 U	U	ug/kg	21.8	2.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Dieldrin	21.8 U	U	ug/kg	21.8	2.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Endosulfan I	11.2 U	U	ug/kg	11.2	1.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Endosulfan II	21.8 U	U	ug/kg	21.8	4.6	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Endosulfan Sulfate	21.8 U	U	ug/kg	21.8	1.5	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Endrin	21.8 U	U	ug/kg	21.8	1.6	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Endrin Aldehyde	21.8 U	U	ug/kg	21.8	2.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Endrin Ketone	21.8 U	U	ug/kg	21.8	3.0	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Heptachlor	11.2 U	U	ug/kg	11.2	1.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Heptachlor Epoxide	11.2 U	U	ug/kg	11.2	1.1	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Methoxychlor	21.8 U	U	ug/kg	21.8	2.9	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Toxaphene	232 U	U	ug/kg	232	38.4	SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	98.7		%	30 - 135		SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
Tetrachloro-m-xylene (S)	79.8		%	30 - 111		SW846 8081B	8/21/17 17:00	JSR	8/25/17 00:58	RWS E
<b>WET CHEMISTRY</b>										
Moisture	25.4		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
Total Solids	74.6		%	0.1	0.01	S2540G-11			8/21/17 11:05	AXD
<b>METALS</b>										
Arsenic, Total	9.6		mg/kg	1.8	0.59	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:45	ZMC E1
Lead, Total	13.0		mg/kg	1.2	0.39	SW846 6020A	8/23/17 01:45	LXC	8/23/17 12:45	ZMC E1

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**ALS Environmental**



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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255272 ERM149|JEFFERSON COUNTY WV

Lab ID: **2255272008**  
Sample ID: **SB-29(4.5-5.0')**

Date Collected: 8/17/2017 11:13 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2255272004</b>	1	SB-29(0-0.5')	SW846 8015D	Oil Range Organics C28-C35
The ALS Middletown Laboratory is not NELAP accredited for Oil Range Organics by method EPA 8015D.				
<b>2255272007</b>	1	SB-29(1.5-2.0')	SW846 8015D	Oil Range Organics C28-C35
The ALS Middletown Laboratory is not NELAP accredited for Oil Range Organics by method EPA 8015D.				
<b>2255272008</b>	3	SB-29(4.5-5.0')	SW846 8015D	Oil Range Organics C28-C35
The ALS Middletown Laboratory is not NELAP accredited for Oil Range Organics by method EPA 8015D.				

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Middletown, PA 17057  
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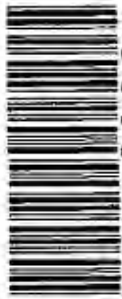


Environmental

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 1  
Courier:             
Tracking #:           



\* 2 2 5 5 2 7 2 \*

Co. Name: <b>ERM</b>		Phone: <b>          </b>	
Contact (Name): <b>DAVE CONNELLY</b>			
Address: <b>204 CHASE DR.</b>			
Bill to (if different than Report to): <b>          </b>		PO#: <b>          </b>	
Project Name/ID: <b>          </b>		ALS Quote #: <b>          </b>	
TAT: <input type="checkbox"/> Normal Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.		Date Required: <b>          </b> Approved By: <b>          </b>	
Email? <input type="checkbox"/> <b>          </b>	Fax? <input type="checkbox"/> <b>          </b>	Y No: <b>          </b>	
Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time
1 SB-19 (1.0'-1.5')	Hold	8/17/17	1031
2 SB-19 (1.5'-2.0')		8/17/17	1033
3 SB-19 (4.5'-5.0')	Hold	8/17/17	1035
4 SB-29 (0'-0.5')		8/17/17	1105
5 SB-29 (0.5'-1.0')	Hold	8/17/17	1107
6 SB-29 (1.0'-1.5')	Hold	8/17/17	1109
7 SB-29 (1.5'-2.0')		8/17/17	1111
8 SB-29 (4.5'-5.0')		8/17/17	1113
SAMPLED BY (Please Print): <b>Evan G. B...</b>		Project Comments: <b>          </b>	
Relinquished By / Company Name	Date	Time	Received By / Company Name
1 <b>Evan G. B...</b>	8/16/17	0800	2 <b>ALS Customer</b>
3 <b>MS-BD</b>	8-18	1524	4 <b>QA MS</b>
5 <b>          </b>			6 <b>          </b>
7 <b>          </b>			8 <b>          </b>
9 <b>          </b>			10 <b>          </b>
ANALYSES/METHOD REQUESTED		Enter Number of Containers Per Analysis	
PAHs 8270		1	
BTEX 8260		1	
Arsenic & Lead 6004		1	
Pesticides 80814		1	
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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:34:26 PM - See workorder comment section for explanation

Project Name: **2017-JEFFERSON COUNTY**

Workorder: **2255273**

Purchase Order:

Workorder ID: **ERM150|JEFFERSON COUNTY WV**

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255273001	SB-17(24.5-25.0')	Other	8/17/2017 09:10	8/18/2017 15:29	Collected by Client
2255273002	SB-18(0-0.5')	Solid	8/17/2017 09:55	8/18/2017 15:29	Collected by Client
2255273003	SB-18(0.5-1.0')	Other	8/17/2017 09:57	8/18/2017 15:29	Collected by Client
2255273004	SB-18(1.0-1.5')	Other	8/17/2017 09:59	8/18/2017 15:29	Collected by Client
2255273005	SB-18(1.5-2.0')	Solid	8/17/2017 10:01	8/18/2017 15:29	Collected by Client
2255273006	SB-18(4.5-5.0')	Solid	8/17/2017 10:03	8/29/2017 11:34	Collected by Client
2255273007	SB-19(0-0.5')	Solid	8/17/2017 10:27	8/18/2017 15:29	Collected by Client
2255273008	SB-19(0.5-1.0')	Other	8/17/2017 10:29	8/18/2017 15:29	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2255273002**Sample ID:** SB-18(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255273005**Sample ID:** SB-18(1.5-2.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255273006**Sample ID:** SB-18(4.5-5.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255273007**Sample ID:** SB-19(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273002**  
Sample ID: **SB-18(0-0.5')**

Date Collected: 8/17/2017 09:55 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
alpha-BHC	9.8 U	U	ug/kg	9.8	0.87	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
gamma-BHC	9.8 U	U	ug/kg	9.8	0.81	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
4,4'-DDD	19.1 U	U	ug/kg	19.1	1.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
4,4'-DDE	82.9		ug/kg	19.1	2.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
4,4'-DDT	19.7		ug/kg	19.1	2.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Dieldrin	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Endrin	19.1 U	U	ug/kg	19.1	1.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Methoxychlor	19.1 U	U	ug/kg	19.1	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Toxaphene	203 U	U	ug/kg	203	33.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	96.7		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
Tetrachloro-m-xylene (S)	80.7		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:14 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	17.6		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	82.4		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	9.1		mg/kg	1.6	0.53	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:49 ZMC	A1	
Lead, Total	20.5		mg/kg	1.1	0.35	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:49 ZMC	A1	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273002**  
Sample ID: **SB-18(0-0.5')**

Date Collected: 8/17/2017 09:55 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273005**  
Sample ID: **SB-18(1.5-2.0')**

Date Collected: 8/17/2017 10:01 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.3 U	U	ug/kg	11.3	3.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
alpha-BHC	11.3 U	U	ug/kg	11.3	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
beta-BHC	11.3 U	U	ug/kg	11.3	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
delta-BHC	11.3 U	U	ug/kg	11.3	0.87	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
gamma-BHC	11.3 U	U	ug/kg	11.3	0.93	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
alpha-Chlordane	11.3 U	U	ug/kg	11.3	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
gamma-Chlordane	11.3 U	U	ug/kg	11.3	1.9	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
4,4'-DDD	22.0 U	U	ug/kg	22.0	1.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
4,4'-DDE	11.8J	J	ug/kg	22.0	3.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
4,4'-DDT	22.0 U	U	ug/kg	22.0	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Dieldrin	22.0 U	U	ug/kg	22.0	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Endosulfan I	11.3 U	U	ug/kg	11.3	1.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Endosulfan II	22.0 U	U	ug/kg	22.0	4.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Endosulfan Sulfate	22.0 U	U	ug/kg	22.0	1.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Endrin	22.0 U	U	ug/kg	22.0	1.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Endrin Aldehyde	22.0 U	U	ug/kg	22.0	2.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Endrin Ketone	22.0 U	U	ug/kg	22.0	3.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Heptachlor	11.3 U	U	ug/kg	11.3	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Heptachlor Epoxide	11.3 U	U	ug/kg	11.3	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Methoxychlor	22.0 U	U	ug/kg	22.0	2.9	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Toxaphene	233 U	U	ug/kg	233	38.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	96.7		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
Tetrachloro-m-xylene (S)	86.9		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:29	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	25.8		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	74.2		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	16.8		mg/kg	1.8	0.61	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:53	ZMC	A1
Lead, Total	22.9		mg/kg	1.2	0.40	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:53	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273005**  
Sample ID: **SB-18(1.5-2.0')**

Date Collected: 8/17/2017 10:01 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273006**  
Sample ID: **SB-18(4.5-5.0')**

Date Collected: 8/17/2017 10:03 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.4 U	U	ug/kg	10.4	3.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
alpha-BHC	10.4 U	U	ug/kg	10.4	0.91	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
beta-BHC	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
delta-BHC	10.4 U	U	ug/kg	10.4	0.79	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
gamma-BHC	10.4 U	U	ug/kg	10.4	0.85	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
alpha-Chlordane	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
gamma-Chlordane	10.4 U	U	ug/kg	10.4	1.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
4,4'-DDD	20.1 U	U	ug/kg	20.1	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
4,4'-DDE	20.1 U	U	ug/kg	20.1	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
4,4'-DDT	20.1 U	U	ug/kg	20.1	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Dieldrin	20.1 U	U	ug/kg	20.1	2.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Endosulfan I	10.4 U	U	ug/kg	10.4	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Endosulfan II	20.1 U	U	ug/kg	20.1	4.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Endosulfan Sulfate	20.1 U	U	ug/kg	20.1	1.3	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Endrin	20.1 U	U	ug/kg	20.1	1.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Endrin Aldehyde	20.1 U	U	ug/kg	20.1	2.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Endrin Ketone	20.1 U	U	ug/kg	20.1	2.8	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Heptachlor	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Heptachlor Epoxide	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Methoxychlor	20.1 U	U	ug/kg	20.1	2.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Toxaphene	213 U	U	ug/kg	213	35.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	80.6		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
Tetrachloro-m-xylene (S)	77.2		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 19:32	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	23.1		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	76.9		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	12.8		mg/kg	1.8	0.61	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:56	ZMC	A1
Lead, Total	27.2		mg/kg	1.2	0.40	SW846 6020A	8/30/17 02:45 LXC	8/30/17 07:56	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273006**  
Sample ID: **SB-18(4.5-5.0')**

Date Collected: 8/17/2017 10:03 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
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## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273007**  
Sample ID: **SB-19(0-0.5')**

Date Collected: 8/17/2017 10:27 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.3 U	U	ug/kg	9.3	3.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
alpha-BHC	9.3 U	U	ug/kg	9.3	0.82	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
beta-BHC	9.3 U	U	ug/kg	9.3	0.99	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
delta-BHC	9.3 U	U	ug/kg	9.3	0.71	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
gamma-BHC	9.3 U	U	ug/kg	9.3	0.77	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
alpha-Chlordane	9.3 U	U	ug/kg	9.3	0.99	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
gamma-Chlordane	9.3 U	U	ug/kg	9.3	1.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
4,4'-DDD	18.1 U	U	ug/kg	18.1	1.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
4,4'-DDE	18.1 U	U	ug/kg	18.1	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
4,4'-DDT	18.1 U	U	ug/kg	18.1	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Dieldrin	18.1 U	U	ug/kg	18.1	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Endosulfan I	9.3 U	U	ug/kg	9.3	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Endosulfan II	18.1 U	U	ug/kg	18.1	3.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Endosulfan Sulfate	18.1 U	U	ug/kg	18.1	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Endrin	18.1 U	U	ug/kg	18.1	1.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Endrin Aldehyde	18.1 U	U	ug/kg	18.1	2.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Endrin Ketone	18.1 U	U	ug/kg	18.1	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Heptachlor	9.3 U	U	ug/kg	9.3	0.93	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Heptachlor Epoxide	9.3 U	U	ug/kg	9.3	0.93	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Methoxychlor	18.1 U	U	ug/kg	18.1	2.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Toxaphene	192 U	U	ug/kg	192	31.9	SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	101		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
Tetrachloro-m-xylene (S)	86.2		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 01:45 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	14.8		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	85.2		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	6.3		mg/kg	1.5	0.51	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:57	ZMC	A1
Lead, Total	18.1		mg/kg	1.0	0.33	SW846 6020A	8/23/17 01:45 LXC	8/23/17 12:57	ZMC	A1

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**ALS Environmental**



34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ [www.alsglobal.com](http://www.alsglobal.com)

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255273 ERM150|JEFFERSON COUNTY WV

Lab ID: **2255273007**  
Sample ID: **SB-19(0-0.5')**

Date Collected: 8/17/2017 10:27 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
------------	---------	------	-------	-----	-----	--------	-------------	----------	----	------

Ms. Susan J Scherer  
Project Coordinator

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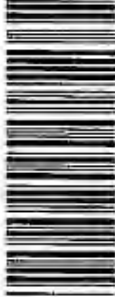


34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**Environmetal**

**CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS**  
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 1  
Courier:             
Tracking #:           



\* 2 2 5 5 2 7 3 \*

Co. Name: ERM  
Contact (Report to): DAVE CONNELLY  
Address: 204 CHASE DRIVE  
Phone: 3047554777

Bill to (if different than Report to):  
PO#:             
Project Name/ID:            ALS Quote #:             
TAT: ☒ Normal-Standard TAT is 10-12 business days.  
Rush-Subject to ALS approval and surcharges.  
Email? ☐ Fax? ☐ Approved By:           

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time
1 SB-17 (24.5'-25.0')	HOLD	8/17/17	0910
2 SB-18 (0-0.5')		8/17/17	0955
3 SB-18 (0.5'-1.0')	HOLD	8/17/17	0957
4 SB-18 (1.0'-1.5')	HOLD	8/17/17	0959
5 SB-18 (1.5'-2.0')		8/17/17	1001
6 SB-18 (4.5'-5.0')	HOLD	8/17/17	1003
7 SB-18 (6-0.5')		8/17/17	1021
8 SB-19 (0.5'-1.0')	HOLD	8/17/17	1029

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 <u>ERM</u>	8/16/17	0800	2 <u>ALS - BAKER</u>	8-18	800
3 <u>ALS - BAKER</u>	8-18	1539	4 <u>ERM</u>	8-18	1529
5 <u>          </u>			6 <u>          </u>		
7 <u>          </u>			8 <u>          </u>		
9 <u>          </u>			10 <u>          </u>		

Project Comments:           

SAMPLED BY (Please Print): Ken Baisden

Container Type: <u>CG</u>		Container Size: <u>800</u>		Preservative: <u>          </u>																																														
ANALYSIS/METHOD REQUESTED																																																		
<u>Pesticides 80814</u> <u>Arsenic + Lead</u> <u>66104</u>																																																		
Enter Number of Containers Per Analysis																																																		
<table border="1"> <tr> <th>Container</th> <th>Correct sample volume?</th> <th>Correct preservation?</th> <th>Headspace/Volatiles?</th> <th>Container in good condition?</th> </tr> <tr> <td>1</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>2</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>3</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>4</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>5</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>6</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>7</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>8</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>						Container	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Container in good condition?	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Container	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Container in good condition?																																														
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																														
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																														
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																														
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5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																														
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7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																														
8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																														
Receipt Information Received by: <u>          </u> Cooler Temp: <u>6°</u> Therm. ID: <u>309</u> No. of Coolant: <u>          </u> Notes: <u>          </u>																																																		
ALS FIELD SERVICES <input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment <input type="checkbox"/> Other: <u>          </u>																																																		

\* G-Grab; C-Composite \*\* Matrix: Air-Air; DW-Drinking Water; GW-Groundwater; Oil-Oil; Other-Liquid; SL-Sludge; SO-Soil; WP-Water; WW-Wastewater  
 \*\*\*Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic. Container Size: 250ml, 500ml, 1L, 2L, etc. Preservative: HCl, HNO3, NaOH, etc.

August 31, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 8/31/2017 3:34:49 PM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2255274</b>
Purchase Order:		Workorder ID:	<b>ERM151 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Tuesday, August 29, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

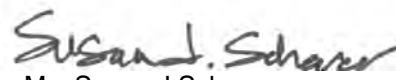
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

  
Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255274001	SB-25(0-0.5')	Solid	8/17/2017 16:00	8/18/2017 15:29	Collected by Client
2255274002	SB-25(0.5-1.0')	Other	8/17/2017 16:02	8/18/2017 15:29	Collected by Client
2255274003	SB-25(1.0-1.5')	Other	8/17/2017 16:04	8/18/2017 15:29	Collected by Client
2255274004	SB-25(1.5-2.0')	Solid	8/17/2017 16:06	8/18/2017 15:29	Collected by Client
2255274005	SB-25(4.5-5.0')	Solid	8/17/2017 16:08	8/29/2017 11:34	Collected by Client
2255274006	SB-21(0-0.5')	Solid	8/17/2017 16:20	8/18/2017 15:29	Collected by Client
2255274007	SB-21(0.5-1.0')	Other	8/17/2017 16:22	8/18/2017 15:29	Collected by Client
2255274008	SB-21(1.0-1.5')	Other	8/17/2017 16:24	8/18/2017 15:29	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

### Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 08/29/17 at 1134. SJS 08/29/17

### Sample Comments

**Lab ID:** 2255274001**Sample ID:** SB-25(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255274004**Sample ID:** SB-25(1.5-2.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255274005**Sample ID:** SB-25(4.5-5.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255274006**Sample ID:** SB-21(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274001**  
Sample ID: **SB-25(0-0.5')**

Date Collected: 8/17/2017 16:00 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.6 U	U	ug/kg	9.6	3.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
alpha-BHC	9.6 U	U	ug/kg	9.6	0.85	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
beta-BHC	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
delta-BHC	9.6 U	U	ug/kg	9.6	0.73	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
gamma-BHC	9.6 U	U	ug/kg	9.6	0.79	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
alpha-Chlordane	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
gamma-Chlordane	9.6 U	U	ug/kg	9.6	1.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
4,4'-DDD	18.7 U	U	ug/kg	18.7	1.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
4,4'-DDE	161		ug/kg	18.7	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
4,4'-DDT	65.7		ug/kg	18.7	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Dieldrin	18.7 U	U	ug/kg	18.7	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Endosulfan I	9.6 U	U	ug/kg	9.6	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Endosulfan II	18.7 U	U	ug/kg	18.7	3.9	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Endosulfan Sulfate	18.7 U	U	ug/kg	18.7	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Endrin	18.7 U	U	ug/kg	18.7	1.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Endrin Aldehyde	18.7 U	U	ug/kg	18.7	2.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Endrin Ketone	18.7 U	U	ug/kg	18.7	2.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Heptachlor	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Heptachlor Epoxide	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Methoxychlor	18.7 U	U	ug/kg	18.7	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Toxaphene	198 U	U	ug/kg	198	32.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	75.5		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
Tetrachloro-m-xylene (S)	63.6		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:01	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	16.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	83.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	8.5		mg/kg	1.8	0.59	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:01	ZMC	A1
Lead, Total	16.4		mg/kg	1.2	0.39	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:01	ZMC	A1

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274001**  
Sample ID: **SB-25(0-0.5')**

Date Collected: 8/17/2017 16:00 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274004**  
Sample ID: **SB-25(1.5-2.0')**

Date Collected: 8/17/2017 16:06 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
4,4'-DDD	19.5 U	U	ug/kg	19.5	1.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
4,4'-DDE	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
4,4'-DDT	2.9J	J	ug/kg	19.5	2.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	53.5		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
Tetrachloro-m-xylene (S)	47.7		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:17	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	19.9		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	80.1		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	7.5		mg/kg	1.7	0.58	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:04	ZMC	A1
Lead, Total	12.8		mg/kg	1.2	0.38	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:04	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274004**  
Sample ID: **SB-25(1.5-2.0')**

Date Collected: 8/17/2017 16:06 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274005**  
Sample ID: **SB-25(4.5-5.0')**

Date Collected: 8/17/2017 16:08 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.6 U	U	ug/kg	9.6	3.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
alpha-BHC	9.6 U	U	ug/kg	9.6	0.84	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
beta-BHC	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
delta-BHC	9.6 U	U	ug/kg	9.6	0.73	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
gamma-BHC	9.6 U	U	ug/kg	9.6	0.79	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
alpha-Chlordane	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
gamma-Chlordane	9.6 U	U	ug/kg	9.6	1.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
4,4'-DDD	18.6 U	U	ug/kg	18.6	1.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
4,4'-DDE	18.6 U	U	ug/kg	18.6	2.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
4,4'-DDT	18.6 U	U	ug/kg	18.6	2.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Dieldrin	18.6 U	U	ug/kg	18.6	2.1	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Endosulfan I	9.6 U	U	ug/kg	9.6	1.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Endosulfan II	18.6 U	U	ug/kg	18.6	3.9	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Endosulfan Sulfate	18.6 U	U	ug/kg	18.6	1.2	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Endrin	18.6 U	U	ug/kg	18.6	1.4	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Endrin Aldehyde	18.6 U	U	ug/kg	18.6	2.0	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Endrin Ketone	18.6 U	U	ug/kg	18.6	2.6	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Heptachlor	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Heptachlor Epoxide	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Methoxychlor	18.6 U	U	ug/kg	18.6	2.5	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Toxaphene	197 U	U	ug/kg	197	32.7	SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	91.4		%	30 - 135		SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
Tetrachloro-m-xylene (S)	74.7		%	30 - 111		SW846 8081B	8/29/17 23:50 CMA	8/30/17 20:19	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	16.8		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	83.2		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	7.6		mg/kg	1.8	0.60	SW846 6020A	8/30/17 02:45 LXC	8/30/17 08:11	ZMC	A1
Lead, Total	15.1		mg/kg	1.2	0.40	SW846 6020A	8/30/17 02:45 LXC	8/30/17 08:11	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274005**  
Sample ID: **SB-25(4.5-5.0')**

Date Collected: 8/17/2017 16:08 Matrix: Solid  
Date Received: 8/29/2017 11:34

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274006**  
Sample ID: **SB-21(0-0.5')**

Date Collected: 8/17/2017 16:20 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.6 U	U	ug/kg	9.6	3.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
alpha-BHC	9.6 U	U	ug/kg	9.6	0.85	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
beta-BHC	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
delta-BHC	9.6 U	U	ug/kg	9.6	0.73	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
gamma-BHC	9.6 U	U	ug/kg	9.6	0.79	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
alpha-Chlordane	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
gamma-Chlordane	9.6 U	U	ug/kg	9.6	1.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
4,4'-DDD	18.6 U	U	ug/kg	18.6	1.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
4,4'-DDE	18.6 U	U	ug/kg	18.6	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
4,4'-DDT	18.6 U	U	ug/kg	18.6	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Dieldrin	18.6 U	U	ug/kg	18.6	2.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Endosulfan I	9.6 U	U	ug/kg	9.6	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Endosulfan II	18.6 U	U	ug/kg	18.6	3.9	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Endosulfan Sulfate	18.6 U	U	ug/kg	18.6	1.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Endrin	18.6 U	U	ug/kg	18.6	1.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Endrin Aldehyde	18.6 U	U	ug/kg	18.6	2.0	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Endrin Ketone	18.6 U	U	ug/kg	18.6	2.6	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Heptachlor	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Heptachlor Epoxide	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Methoxychlor	18.6 U	U	ug/kg	18.6	2.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Toxaphene	198 U	U	ug/kg	198	32.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	96.4		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
Tetrachloro-m-xylene (S)	80.4		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:32	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	16.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	83.5		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	7.3		mg/kg	1.5	0.51	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:08	ZMC	A1
Lead, Total	11.9		mg/kg	1.0	0.33	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:08	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255274 ERM151|JEFFERSON COUNTY WV

Lab ID: **2255274006**  
Sample ID: **SB-21(0-0.5')**

Date Collected: 8/17/2017 16:20 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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**CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS**

Page \_\_\_\_\_ of \_\_\_\_\_  
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September 4, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 9/4/2017 8:31:17 AM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2255275</b>
Purchase Order:		Workorder ID:	<b>ERM152 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Friday, August 18, 2017 and Wednesday, August 30, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255275001	SB-26(0.5-1.0')	Other	8/17/2017 14:27	8/18/2017 15:29	Collected by Client
2255275002	SB-26(1.0-1.5')	Other	8/17/2017 14:29	8/18/2017 15:29	Collected by Client
2255275003	SB-26(1.5-2.0')	Solid	8/17/2017 14:31	8/18/2017 15:29	Collected by Client
2255275004	SB-26(4.5-5.0')	Solid	8/17/2017 14:33	8/30/2017 08:10	Collected by Client
2255275005	SB-26(9.5-10.0')	Solid	8/17/2017 14:38	8/30/2017 08:10	Collected by Client
2255275006	SB-26(14.5-15.0')	Other	8/17/2017 14:43	8/18/2017 15:29	Collected by Client
2255275007	SB-26(19.5-20.0')	Other	8/17/2017 14:48	8/18/2017 15:29	Collected by Client
2255275008	SB-26(24.5-25.0')	Other	8/17/2017 14:53	8/18/2017 15:29	Collected by Client
2255275009	ER-2	Water	8/18/2017 08:15	8/18/2017 15:29	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

### Workorder Comments

For Work Order No. 2255275, please have the lab analyze the following two samples for Pesticides, Pb, and As:

- SB-26 (4.5-5.0')
- SB-26 (9.5-10.0')

SJS 08/30/17

### Sample Comments

**Lab ID:** 2255275003**Sample ID:** SB-26(1.5-2.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255275004**Sample ID:** SB-26(4.5-5.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255275005**Sample ID:** SB-26(9.5-10.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275003**  
Sample ID: **SB-26(1.5-2.0')**

Date Collected: 8/17/2017 14:31 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.6 U	U	ug/kg	10.6	3.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
alpha-BHC	10.6 U	U	ug/kg	10.6	0.94	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
beta-BHC	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
delta-BHC	10.6 U	U	ug/kg	10.6	0.81	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
gamma-BHC	10.6 U	U	ug/kg	10.6	0.87	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
alpha-Chlordane	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
gamma-Chlordane	10.6 U	U	ug/kg	10.6	1.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
4,4'-DDD	20.6 U	U	ug/kg	20.6	1.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
4,4'-DDE	20.6 U	U	ug/kg	20.6	2.8	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
4,4'-DDT	20.6 U	U	ug/kg	20.6	2.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Dieldrin	20.6 U	U	ug/kg	20.6	2.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Endosulfan I	10.6 U	U	ug/kg	10.6	1.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Endosulfan II	20.6 U	U	ug/kg	20.6	4.3	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Endosulfan Sulfate	20.6 U	U	ug/kg	20.6	1.4	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Endrin	20.6 U	U	ug/kg	20.6	1.5	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Endrin Aldehyde	20.6 U	U	ug/kg	20.6	2.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Endrin Ketone	20.6 U	U	ug/kg	20.6	2.9	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Heptachlor	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Heptachlor Epoxide	10.6 U	U	ug/kg	10.6	1.1	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Methoxychlor	20.6 U	U	ug/kg	20.6	2.7	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Toxaphene	219 U	U	ug/kg	219	36.2	SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	87.5		%	30 - 135		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
Tetrachloro-m-xylene (S)	77.7		%	30 - 111		SW846 8081B	8/21/17 17:00 JSR	8/25/17 02:48 RWS	A	
<b>WET CHEMISTRY</b>										
Moisture	23.0		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
Total Solids	77.0		%	0.1	0.01	S2540G-11		8/21/17 11:05	AXD	
<b>METALS</b>										
Arsenic, Total	16.9		mg/kg	1.8	0.60	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:12 ZMC	A1	
Lead, Total	33.8		mg/kg	1.2	0.40	SW846 6020A	8/23/17 01:45 LXC	8/23/17 13:12 ZMC	A1	

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275003**  
Sample ID: **SB-26(1.5-2.0')**

Date Collected: 8/17/2017 14:31 Matrix: Solid  
Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275004**  
Sample ID: **SB-26(4.5-5.0')**

Date Collected: 8/17/2017 14:33 Matrix: Solid  
Date Received: 8/30/2017 08:10

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.3 U	U	ug/kg	10.3	3.3	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
alpha-BHC	10.3 U	U	ug/kg	10.3	0.90	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
beta-BHC	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
delta-BHC	10.3 U	U	ug/kg	10.3	0.78	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
gamma-BHC	10.3 U	U	ug/kg	10.3	0.84	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
alpha-Chlordane	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
gamma-Chlordane	10.3 U	U	ug/kg	10.3	1.7	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
4,4'-DDD	19.9 U	U	ug/kg	19.9	1.6	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
4,4'-DDE	19.9 U	U	ug/kg	19.9	2.7	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
4,4'-DDT	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Dieldrin	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Endosulfan I	10.3 U	U	ug/kg	10.3	1.3	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Endosulfan II	19.9 U	U	ug/kg	19.9	4.2	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Endosulfan Sulfate	19.9 U	U	ug/kg	19.9	1.3	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Endrin	19.9 U	U	ug/kg	19.9	1.4	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Endrin Aldehyde	19.9 U	U	ug/kg	19.9	2.2	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Endrin Ketone	19.9 U	U	ug/kg	19.9	2.8	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Heptachlor	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Heptachlor Epoxide	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Methoxychlor	19.9 U	U	ug/kg	19.9	2.7	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Toxaphene	211 U	U	ug/kg	211	35.0	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	66.9		%	30 - 135		SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
Tetrachloro-m-xylene (S)	68.2		%	30 - 111		SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:01	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	20.8		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	79.2		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	15.1		mg/kg	1.8	0.61	SW846 6020A	8/31/17 02:35 LXC	8/31/17 06:34	ZMC	A1
Lead, Total	22.6		mg/kg	1.2	0.40	SW846 6020A	8/31/17 02:35 LXC	8/31/17 06:34	ZMC	A1

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275004**  
Sample ID: **SB-26(4.5-5.0')**

Date Collected: 8/17/2017 14:33 Matrix: Solid  
Date Received: 8/30/2017 08:10

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275005**  
Sample ID: **SB-26(9.5-10.0')**

Date Collected: 8/17/2017 14:38 Matrix: Solid  
Date Received: 8/30/2017 08:10

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.2 U	U	ug/kg	11.2	3.6	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
alpha-BHC	11.2 U	U	ug/kg	11.2	0.98	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
beta-BHC	11.2 U	U	ug/kg	11.2	1.2	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
delta-BHC	11.2 U	U	ug/kg	11.2	0.85	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
gamma-BHC	11.2 U	U	ug/kg	11.2	0.92	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
alpha-Chlordane	11.2 U	U	ug/kg	11.2	1.2	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
gamma-Chlordane	11.2 U	U	ug/kg	11.2	1.9	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
4,4'-DDD	21.7 U	U	ug/kg	21.7	1.8	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
4,4'-DDE	21.7 U	U	ug/kg	21.7	3.0	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
4,4'-DDT	21.7 U	U	ug/kg	21.7	2.5	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Dieldrin	21.7 U	U	ug/kg	21.7	2.5	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Endosulfan I	11.2 U	U	ug/kg	11.2	1.4	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Endosulfan II	21.7 U	U	ug/kg	21.7	4.5	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Endosulfan Sulfate	21.7 U	U	ug/kg	21.7	1.4	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Endrin	21.7 U	U	ug/kg	21.7	1.6	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Endrin Aldehyde	21.7 U	U	ug/kg	21.7	2.4	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Endrin Ketone	21.7 U	U	ug/kg	21.7	3.0	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Heptachlor	11.2 U	U	ug/kg	11.2	1.1	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Heptachlor Epoxide	11.2 U	U	ug/kg	11.2	1.1	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Methoxychlor	21.7 U	U	ug/kg	21.7	2.9	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Toxaphene	230 U	U	ug/kg	230	38.1	SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	75.6		%	30 - 135		SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
Tetrachloro-m-xylene (S)	70.6		%	30 - 111		SW846 8081B	8/31/17 00:15 CMA	8/31/17 14:17	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	26.7		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
Total Solids	73.3		%	0.1	0.01	S2540G-11		8/30/17 09:28	AXD	A
<b>METALS</b>										
Arsenic, Total	16.2		mg/kg	2.0	0.67	SW846 6020A	8/31/17 02:35 LXC	8/31/17 07:05	ZMC	A1
Lead, Total	15.3		mg/kg	1.3	0.44	SW846 6020A	8/31/17 02:35 LXC	8/31/17 07:05	ZMC	A1

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275005**  
Sample ID: **SB-26(9.5-10.0')**

Date Collected: 8/17/2017 14:38 Matrix: Solid  
Date Received: 8/30/2017 08:10

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

### ALS Environmental Laboratory Locations Across North America

**Canada:** Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275009**

Date Collected: 8/18/2017 08:15

Matrix: Water

Sample ID: **ER-2**

Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
Benzene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/25/17 03:14	CJG	A
Ethylbenzene	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/25/17 03:14	CJG	A
Toluene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/25/17 03:14	CJG	A
Total Xylenes	3.0 U	U	ug/L	3.0	0.66	SW846 8260B		8/25/17 03:14	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	101		%	62 - 133		SW846 8260B		8/25/17 03:14	CJG	A
4-Bromofluorobenzene (S)	108		%	79 - 114		SW846 8260B		8/25/17 03:14	CJG	A
Dibromofluoromethane (S)	93.9		%	78 - 116		SW846 8260B		8/25/17 03:14	CJG	A
Toluene-d8 (S)	109		%	76 - 127		SW846 8260B		8/25/17 03:14	CJG	A
<b>SEMIVOLATILES</b>										
Acenaphthene	1.6 U	U	ug/L	1.6	0.16	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Acenaphthylene	1.6 U	U	ug/L	1.6	0.20	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Anthracene	1.6 U	U	ug/L	1.6	0.16	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Benzo(a)anthracene	1.6 U	U	ug/L	1.6	0.18	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Benzo(a)pyrene	1.6 U	U	ug/L	1.6	0.23	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Benzo(b)fluoranthene	1.6 U	U	ug/L	1.6	0.14	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Benzo(g,h,i)perylene	1.6 U	U	ug/L	1.6	0.23	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Benzo(k)fluoranthene	1.6 U	U	ug/L	1.6	0.20	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Chrysene	1.6 U	U	ug/L	1.6	0.16	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Dibenzo(a,h)anthracene	1.6 U	U	ug/L	1.6	0.22	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Fluoranthene	1.6 U	U	ug/L	1.6	0.18	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Fluorene	1.6 U	U	ug/L	1.6	0.21	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Indeno(1,2,3-cd)pyrene	1.6 U	U	ug/L	1.6	0.13	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Naphthalene	1.6 U	U	ug/L	1.6	0.19	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Phenanthrene	1.6 U	U	ug/L	1.6	0.14	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Pyrene	1.6 U	U	ug/L	1.6	0.17	SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
2-Fluorobiphenyl (S)	66.8		%	52 - 118		SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Nitrobenzene-d5 (S)	73		%	27 - 139		SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
Terphenyl-d14 (S)	71.6		%	46 - 133		SW846 8270D	8/23/17 08:25	CAC	8/25/17 16:33	CGS E
<b>SEMIVOLATILE SIM</b>										
Acenaphthene	0.11 U	U	ug/L	0.11	0.012	8270 SIM	8/23/17 08:25	CAC	8/24/17 12:47	GEC E
Acenaphthylene	0.11 U	U	ug/L	0.11	0.012	8270 SIM	8/23/17 08:25	CAC	8/24/17 12:47	GEC E
Anthracene	0.11 U	U	ug/L	0.11	0.018	8270 SIM	8/23/17 08:25	CAC	8/24/17 12:47	GEC E
Benzo(a)anthracene	0.11 U	U	ug/L	0.11	0.018	8270 SIM	8/23/17 08:25	CAC	8/24/17 12:47	GEC E

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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

## ANALYTICAL RESULTS

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275009**

Date Collected: 8/18/2017 08:15

Matrix: Water

Sample ID: **ER-2**

Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Benzo(a)pyrene	0.11 U	U	ug/L	0.11	0.021	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Benzo(b)fluoranthene	0.11 U	U	ug/L	0.11	0.021	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Benzo(g,h,i)perylene	0.11 U	U	ug/L	0.11	0.040	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Benzo(k)fluoranthene	0.11 U	U	ug/L	0.11	0.026	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Chrysene	0.11 U	U	ug/L	0.11	0.018	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Dibenzo(a,h)anthracene	0.074 U	U	ug/L	0.074	0.024	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Fluoranthene	0.11 U	U	ug/L	0.11	0.019	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Fluorene	0.11 U	U	ug/L	0.11	0.016	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Indeno(1,2,3-cd)pyrene	0.11 U	U	ug/L	0.11	0.043	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Naphthalene	0.11 U	U	ug/L	0.11	0.039	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Phenanthrene	0.11 U	U	ug/L	0.11	0.021	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Pyrene	0.11 U	U	ug/L	0.11	0.016	8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
2-Methylnapthalene-d10 (S)	77.3		%	29 - 112		8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
Fluoranthene-d10 (S)	72.8		%	45 - 130		8270 SIM	8/23/17 08:25 CAC	8/24/17 12:47	GEC	E	
PESTICIDES											
Aldrin	0.021 U	U	ug/L	0.021	0.0052	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
alpha-BHC	0.021 U	U	ug/L	0.021	0.0021	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
beta-BHC	0.021 U	U	ug/L	0.021	0.0083	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
delta-BHC	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
gamma-BHC	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
alpha-Chlordane	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
gamma-Chlordane	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
4,4'-DDD	0.021 U	U	ug/L	0.021	0.0073	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
4,4'-DDE	0.021 U	U	ug/L	0.021	0.0073	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
4,4'-DDT	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Dieldrin	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Endosulfan I	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Endosulfan II	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Endosulfan Sulfate	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Endrin	0.021 U	U	ug/L	0.021	0.0083	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Endrin Aldehyde	0.021 U	U	ug/L	0.021	0.010	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Endrin Ketone	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Heptachlor	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Heptachlor Epoxide	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Methoxychlor	0.021 U	U	ug/L	0.021	0.0094	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	
Toxaphene	1.0 U	U	ug/L	1.0	0.20	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:25	RWS	H	

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**ALS Environmental**

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010, NY 11759, PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343**ANALYTICAL RESULTS**

Workorder: 2255275 ERM152|JEFFERSON COUNTY WV

Lab ID: **2255275009**

Date Collected: 8/18/2017 08:15

Matrix: Water

Sample ID: **ER-2**

Date Received: 8/18/2017 15:29

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	64.5		%	30 - 140		SW846 8081B	8/21/17 17:50	JXD	8/23/17 23:25	RWS H
Tetrachloro-m-xylene (S)	73.1		%	30 - 123		SW846 8081B	8/21/17 17:50	JXD	8/23/17 23:25	RWS H
<b>PETROLEUM HC's</b>										
Diesel Range Organics C10-C28	0.17 U	U	mg/L	0.17	0.053	SW846 8015D	8/23/17 08:25	CAC	8/25/17 14:23	BS J
Gasoline Range Organics	100 U	U	ug/L	100	13.9	SW846 8015D			8/28/17 17:18	DD A
Oil Range Organics C28-C35	0.21 U	U,2	mg/L	0.21	0.096	SW846 8015D	8/23/17 08:25	CAC	8/25/17 14:23	BS J
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
a,a,a-Trifluorotoluene (S)	123		%	90 - 129		SW846 8015D			8/28/17 17:18	DD A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
o-Terphenyl (S)	72.6		%	26 - 139		SW846 8015D	8/23/17 08:25	CAC	8/25/17 14:23	BS J
<b>METALS</b>										
Arsenic, Total	0.0033 U	U	mg/L	0.0033	0.0011	SW846 6020A	8/22/17 01:35	ZMC	8/22/17 05:19	ZMC G1
Lead, Total	0.0022 U	U,1	mg/L	0.0022	0.00074	SW846 6020A	8/22/17 01:35	ZMC	8/22/17 05:19	ZMC G1

Ms. Susan J Scherer

Project Coordinator

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Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
2255275009	1	ER-2	SW846 6020A	Lead, Total
One of the two matrix spike analyses performed on this sample failed to meet acceptable recovery limits. The other matrix spike was within acceptable recovery limits. Matrix interferences are the possible cause for the failure.				
2255275009	2	ER-2	SW846 8015D	Oil Range Organics C28-C35
The ALS Middletown Laboratory is not NELAP accredited for Oil Range Organics by method EPA 8015D.				

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34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

# Environmental

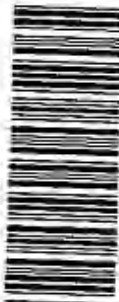
## CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 2

Customer:

Tracking #:



\* 2 2 5 5 2 7 5 \*

Co. Name: <b>ERM</b>		Phone:	
Contact (Name): <b>DAVE CONNELLY</b>			
Address:			
PO#:		ALS Quote #:	
Project Name/ID: <b>82</b>		Date Required:	
TAT: <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.		Approved By:	
Email? <input checked="" type="checkbox"/>	Fax? <input checked="" type="checkbox"/>		
Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time
1 SB-26 (0.5'-1.0')	HOLD	8/17/17	1427
2 SB-26 (1.0'-1.5')	HOLD	8/17/17	1429
3 SB-26 (1.5'-2.0')		8/17/17	1431
4 SB-26 (4.5'-5.0')	HOLD	8/17/17	1433
5 SB-26 (9.5'-10.0')	HOLD	8/17/17	1438
6 SB-26 (14.5'-15.0')	HOLD	8/17/17	1443
7 SB-26 (19.5'-20.0')	HOLD	8/17/17	1448
8 SB-26 (24.5'-25.0')	HOLD	8/17/17	1453
SAMPLED BY (Please Print): <b>Evan Brindley</b>			
Relinquished By / Company Name	Date	Time	Received By / Company Name
1 <b>ERM</b>	8/18/17	1000	2 <b>ALS</b>
3 <b>ERM</b>	8-18	1329	4 <b>gm - ALS</b>
5			5
7			8
9			10

Container Type: <b>Box</b>		Container Size: <b>Box</b>		Preservative: <b>1</b>	
ANALYSIS/METHOD REQUESTED					
Enter Number of Containers Per Analysis					
Pesticides 808/19					
Arsenic & Lead					
Correct containers? <input checked="" type="checkbox"/>					
Correct sample volume? <input checked="" type="checkbox"/>					
Correct preservation? <input checked="" type="checkbox"/>					
Headspace/Volatiles? <input checked="" type="checkbox"/>					
COC Labels complete/accurate? <input checked="" type="checkbox"/>					
Received on ice? <input checked="" type="checkbox"/>					
Seals intact? <input checked="" type="checkbox"/>					
Custody seals Present? <input checked="" type="checkbox"/>					
Container in good condition? <input checked="" type="checkbox"/>					
ALS FIELD SERVICES					
Pickup <input checked="" type="checkbox"/>					
Labor <input checked="" type="checkbox"/>					
Composite Sampling <input checked="" type="checkbox"/>					
Rental Equipment <input checked="" type="checkbox"/>					
Other <input checked="" type="checkbox"/>					
SQA Forms? <input checked="" type="checkbox"/>					
Collected in? <input checked="" type="checkbox"/>					
Standard <input checked="" type="checkbox"/>					
CLP-like <input checked="" type="checkbox"/>					
NJ-Reduced <input checked="" type="checkbox"/>					
NJ-Full <input checked="" type="checkbox"/>					
If yes, format type: <input checked="" type="checkbox"/>					
Data Deliverables					
EOD <input checked="" type="checkbox"/>					
DOD Criteria Required? <input checked="" type="checkbox"/>					
SQA Collected in? <input checked="" type="checkbox"/>					
SQA Forms? <input checked="" type="checkbox"/>					
CLP-like <input checked="" type="checkbox"/>					
NJ-Reduced <input checked="" type="checkbox"/>					
NJ-Full <input checked="" type="checkbox"/>					
If yes, format type: <input checked="" type="checkbox"/>					
Data Deliverables					
EOD <input checked="" type="checkbox"/>					
DOD Criteria Required? <input checked="" type="checkbox"/>					

Matrix: A=Air; G=Groundwater; O=Oil; L=Other Liquid; SL=Sludge; SO=Soil; WP=Waste Water  
Container Type: AQ=Amber Glass; CG=Clear Glass; PL=Plastic. Container Size: 250ml, 500ml, 1L, 2oz, etc. Preservative: HCl, HNO3, NaOH, etc.  
Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY





34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**Environmental**

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 2 of 2

Counter:

Tracking #:

Co. Name: **DAVE CONNELLY**

Contact (Report to): **Eden**

Address: **204 Chase Drive  
Aviennne, WI**

Phone: **3075777**

Bill to (if different than Report to):

PO#:

Project Name/ID:

ALS Quote #:

TAT: ☒ Normal-Standard TAT is 10-12 business days.

☐ Rush-Subject to ALS approval and surcharges.

Email?

Fax?

Y No.

Sample Description/Location  
(as it will appear on the lab report)

COC Comments

Sample Date

Military Time

Matrix

Enter Number of Containers Per Analysis

ANALYSES/METHOD REQUESTED

AG PL mL

AG

Receipt Information

Container in good condition?

COC Labels complete/accurate?

Received on ice?

(If present) Seals intact?

Custody seals Present?

Correct container?

Correct sample volume?

Correct preservation?

Headspace/Volatiles?

Circle appropriate Y or N.

Notes:

No. of Containers:

Therm. ID: **309**

Cooler Temp: **6°**

Formaldehyde

gms

ALS FIELD SERVICES

Pickup

Labor

Composite Sampling

Rental Equipment

Other:

SDWA

Single Samples Collected In?

Form 7-0

Standard

CLP-like

NJ-Reduced

NJ-Full

If yes, formal type:

Other

DOO Criteria Required?

EDS

DATE: 8/18/2010

Relinquished By / Company Name

Date

Time

Received By / Company Name

Date

Time

Project Comments:

SAMPLED BY (Please Print): **Eden, Eden**

1 **ER-2**

2

3

4 **PAT bottles each preserved with HCL**

5 **Used 1 Pet bottle for PAT**

6

7

8

9

10

11 **IL AG H2SO4**

12 **2.40 mL VHS HCL**

13 **PATs**

14 **BTX**

15 **TPH - OR, GRO, PEO**

16 **H2SO4**

17 **IL**

18 **AG**

19 **HCL**

20 **HNO3**

21 **PL**

22 **MIL**

23 **AG**

24 **PL**

25 **MIL**

26 **AG**

27 **PL**

28 **MIL**

29 **AG**

30 **PL**

31 **MIL**

32 **AG**

33 **PL**

34 **MIL**

35 **AG**

36 **PL**

37 **MIL**

38 **AG**

39 **PL**

40 **MIL**

41 **AG**

42 **PL**

43 **MIL**

44 **AG**

45 **PL**

46 **MIL**

47 **AG**

48 **PL**

49 **MIL**

50 **AG**

51 **PL**

52 **MIL**

53 **AG**

54 **PL**

55 **MIL**

56 **AG**

57 **PL**

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93 **PL**

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99 **PL**

100 **MIL**

101 **AG**

102 **PL**

103 **MIL**

104 **AG**

105 **PL**

106 **MIL**

107 **AG**

108 **PL**

109 **MIL**

110 **AG**

111 **PL**

112 **MIL**

113 **AG**

114 **PL**

115 **MIL**

116 **AG**

117 **PL**

118 **MIL**

119 **AG**

120 **PL**

121 **MIL**

122 **AG**

123 **PL**

124 **MIL**

125 **AG**

126 **PL**

127 **MIL**

128 **AG**

129 **PL**

130 **MIL**

131 **AG**

132 **PL**

133 **MIL**

134 **AG**

135 **PL**

136 **MIL**

137 **AG**

138 **PL**

139 **MIL**

140 **AG**

141 **PL**

142 **MIL**

143 **AG**

144 **PL**

145 **MIL**

146 **AG**

147 **PL**

148 **MIL**

149 **AG**

150 **PL**

151 **MIL**

152 **AG**

153 **PL**

154 **MIL**

155 **AG**

156 **PL**

157 **MIL**

158 **AG**

159 **PL**

160 **MIL**

161 **AG**

162 **PL**

163 **MIL**

164 **AG**

165 **PL**

166 **MIL**

167 **AG**

168 **PL**

169 **MIL**

170 **AG**

171 **PL**

172 **MIL**

173 **AG**

174 **PL**

175 **MIL**

176 **AG**

177 **PL**

178 **MIL**

179 **AG**

180 **PL**

181 **MIL**

182 **AG**

183 **PL**

184 **MIL**

185 **AG**

186 **PL**

187 **MIL**

188 **AG**

189 **PL**

190 **MIL**

191 **AG**

192 **PL**

193 **MIL**

194 **AG**

195 **PL**

196 **MIL**

197 **AG**

198 **PL**

199 **MIL**

200 **AG**

201 **PL**

202 **MIL**

203 **AG**

204 **PL**

205 **MIL**

206 **AG**

207 **PL**

208 **MIL**

209 **AG**

210 **PL**

211 **MIL**

212 **AG**

213 **PL**

214 **MIL**

215 **AG**

September 6, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Revised Report - 9/6/2017 8:40:21 AM - See workorder comment section for explanation

Project Name:	<b>2017-JEFFERSON COUNTY</b>	Workorder:	<b>2255951</b>
Purchase Order:		Workorder ID:	<b>ERM153 JEFFERSON COUNTY WV</b>

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, August 22, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

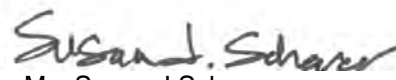
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

  
Ms. Susan J Scherer  
Project Coordinator

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## SAMPLE SUMMARY

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255951001	SB-22 (19.5'-20.0')	Other	8/18/2017 10:03	8/22/2017 16:50	Collected by Client
2255951002	SB-22 (24.5'-25.0')	Other	8/18/2017 10:08	8/22/2017 16:50	Collected by Client
2255951003	SB-20 (0'-0.5')	Solid	8/18/2017 08:30	8/22/2017 16:50	Collected by Client
2255951004	SB-20 (0.5'-1.0')	Other	8/18/2017 08:32	8/22/2017 16:50	Collected by Client
2255951005	SB-20 (1.0'-1.5')	Other	8/18/2017 08:34	8/22/2017 16:50	Collected by Client
2255951006	SB-20 (1.5'-2.0')	Solid	8/18/2017 08:36	8/22/2017 16:50	Collected by Client
2255951007	SB-20 (4.5'-5.0')	Solid	8/18/2017 08:38	8/22/2017 16:50	Collected by Client
2255951008	SB-20 (9.5'-10.0')	Other	8/18/2017 08:43	8/22/2017 16:50	Collected by Client
2255951009	SB-20 (14.5'-15.0')	Other	8/18/2017 08:48	8/22/2017 16:50	Collected by Client
2255951010	SB-22 (0'-0.5')	Solid	8/18/2017 09:35	8/22/2017 16:50	Collected by Client
2255951011	SB-22 (0.5'-1.0')	Other	8/18/2017 09:37	8/22/2017 16:50	Collected by Client
2255951012	SB-22 (1.0'-1.5')	Other	8/18/2017 09:39	8/22/2017 16:50	Collected by Client
2255951013	SB-22 (1.5'-2.0')	Solid	8/18/2017 09:41	8/22/2017 16:50	Collected by Client
2255951014	SB-22 (4.5'-5.0')	Solid	8/18/2017 09:43	8/22/2017 16:50	Collected by Client
2255951015	SB-22 (6.5'-7.0')	Solid	8/18/2017 09:48	8/22/2017 16:50	Collected by Client
2255951016	SB-22 (9.5'-10.0')	Solid	8/18/2017 09:53	8/22/2017 16:50	Collected by Client
2255951017	SB-22 (14.5'-15.0')	Solid	8/18/2017 08:58	8/22/2017 16:50	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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## PROJECT SUMMARY

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

### Workorder Comments

Changes were made to the chain of custody request based on email instructions from Dave Connelly of ERM on 08/23/17. SJS 08/24/17

I have the following requests associated with work order 2255951:

- Please analyze SB-20 (4.5-5') and Hold the analyses for SB-20 (1.5 – 2.0')
- Please analyze SB-22 (4.5-5') and Hold the analyses for SB-22 (1.5 – 2.0')

Everything else looks fine on the work order. Thank you!

This certificate of analysis was modified based on the email request from Dave Connelly of ERM on 08/31/17. SJS 08/31/17

For work order no. 2255951, please have the lab run sample SB-20 (1.5-2.0') for pesticides. Looks like they already ran this one for lead and arsenic. Thank you.

The total metals analysis was performed according to email instructions from Dave Connelly on 08/24/17. SJS 08/24/17

Yes, the original list of metals you received is correct. I just confirmed with the field team that they wrote "Mg" in place of "Mn", and they forgot to add Nickel. Also, the "T." after the Ba on page 3 of the COC stands for "Total" metals.

### Sample Comments

**Lab ID:** 2255951003

**Sample ID:** SB-20 (0'-0.5')

**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255951006

**Sample ID:** SB-20 (1.5'-2.0')

**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255951007

**Sample ID:** SB-20 (4.5'-5.0')

**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255951010

**Sample ID:** SB-22 (0'-0.5')

**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255951014

**Sample ID:** SB-22 (4.5'-5.0')

**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255951015

**Sample ID:** SB-22 (6.5'-7.0')

**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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**PROJECT SUMMARY**

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

**Lab ID:** 2255951016**Sample ID:** SB-22 (9.5'-10.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

**Lab ID:** 2255951017**Sample ID:** SB-22 (14.5'-15.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951003**  
Sample ID: **SB-20 (0'-0.5')**

Date Collected: 8/18/2017 08:30 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
alpha-BHC	10.8 U	U	ug/kg	10.8	0.96	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
delta-BHC	10.8 U	U	ug/kg	10.8	0.83	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
4,4'-DDD	21.0 U	U	ug/kg	21.0	1.7	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
4,4'-DDE	21.0 U	U	ug/kg	21.0	2.9	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
4,4'-DDT	21.0 U	U	ug/kg	21.0	2.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Dieldrin	21.0 U	U	ug/kg	21.0	2.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Endosulfan II	21.0 U	U	ug/kg	21.0	4.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Endosulfan Sulfate	21.0 U	U	ug/kg	21.0	1.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Endrin	21.0 U	U	ug/kg	21.0	1.5	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Endrin Aldehyde	21.0 U	U	ug/kg	21.0	2.3	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Endrin Ketone	21.0 U	U	ug/kg	21.0	2.9	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Methoxychlor	21.0 U	U	ug/kg	21.0	2.8	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Toxaphene	223 U	U	ug/kg	223	37.0	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	74.9		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
Tetrachloro-m-xylene (S)	91		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:24	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	22.1		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	77.9		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	9.9		mg/kg	1.9	0.63	SW846 6020A	8/24/17 00:35 LXC	8/24/17 09:57	ZMC	A1
Lead, Total	26.7		mg/kg	1.3	0.42	SW846 6020A	8/24/17 00:35 LXC	8/24/17 09:57	ZMC	A1

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951003**  
Sample ID: **SB-20 (0'-0.5')**

Date Collected: 8/18/2017 08:30 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951006**  
Sample ID: **SB-20 (1.5'-2.0')**

Date Collected: 8/18/2017 08:36 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.9 U	U	ug/kg	10.9	3.5	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
alpha-BHC	10.9 U	U	ug/kg	10.9	0.96	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
beta-BHC	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
delta-BHC	10.9 U	U	ug/kg	10.9	0.83	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
gamma-BHC	10.9 U	U	ug/kg	10.9	0.90	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
alpha-Chlordane	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
gamma-Chlordane	10.9 U	U	ug/kg	10.9	1.9	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
4,4'-DDD	21.2 U	U	ug/kg	21.2	1.7	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
4,4'-DDE	21.2 U	U	ug/kg	21.2	2.9	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
4,4'-DDT	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Dieldrin	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Endosulfan I	10.9 U	U	ug/kg	10.9	1.3	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Endosulfan II	21.2 U	U	ug/kg	21.2	4.4	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Endosulfan Sulfate	21.2 U	U	ug/kg	21.2	1.4	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Endrin	21.2 U	U	ug/kg	21.2	1.5	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Endrin Aldehyde	21.2 U	U	ug/kg	21.2	2.3	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Endrin Ketone	21.2 U	U	ug/kg	21.2	3.0	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Heptachlor	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Heptachlor Epoxide	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Methoxychlor	21.2 U	U	ug/kg	21.2	2.8	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Toxaphene	225 U	U	ug/kg	225	37.2	SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	64		%	30 - 135		SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
Tetrachloro-m-xylene (S)	70		%	30 - 111		SW846 8081B	8/31/17 16:00 JTH	9/5/17 16:08	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	26.1		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	73.9		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	8.7		mg/kg	1.8	0.60	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:05	ZMC	A1
Lead, Total	25.1		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:05	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951006**  
Sample ID: **SB-20 (1.5'-2.0')**

Date Collected: 8/18/2017 08:36 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951007** Date Collected: 8/18/2017 08:38 Matrix: Solid  
Sample ID: **SB-20 (4.5'-5.0')** Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
alpha-BHC	10.8 U	U	ug/kg	10.8	0.95	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
delta-BHC	10.8 U	U	ug/kg	10.8	0.82	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
4,4'-DDD	20.9 U	U	ug/kg	20.9	1.7	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
4,4'-DDE	20.9 U	U	ug/kg	20.9	2.8	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
4,4'-DDT	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Dieldrin	20.9 U	U	ug/kg	20.9	2.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Endosulfan II	20.9 U	U	ug/kg	20.9	4.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Endosulfan Sulfate	20.9 U	U	ug/kg	20.9	1.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Endrin	20.9 U	U	ug/kg	20.9	1.5	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Endrin Aldehyde	20.9 U	U	ug/kg	20.9	2.3	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Endrin Ketone	20.9 U	U	ug/kg	20.9	2.9	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Methoxychlor	20.9 U	U	ug/kg	20.9	2.8	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Toxaphene	222 U	U	ug/kg	222	36.7	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	78.5		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
Tetrachloro-m-xylene (S)	90.5		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:40	RWS	B
<b>WET CHEMISTRY</b>										
Moisture	25.0		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	B
Total Solids	75.0		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	B
<b>METALS</b>										
Arsenic, Total	14.8		mg/kg	1.9	0.62	SW846 6020A	8/25/17 01:20 LXC	8/25/17 11:31	ZMC	B1
Lead, Total	32.9		mg/kg	1.2	0.41	SW846 6020A	8/25/17 01:20 LXC	8/25/17 11:31	ZMC	B1

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951007**  
Sample ID: **SB-20 (4.5'-5.0')**

Date Collected: 8/18/2017 08:38 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951010**  
Sample ID: **SB-22 (0'-0.5')**

Date Collected: 8/18/2017 09:35 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	9.7 U	U	ug/kg	9.7	3.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
alpha-BHC	9.7 U	U	ug/kg	9.7	0.85	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
beta-BHC	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
delta-BHC	9.7 U	U	ug/kg	9.7	0.74	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
gamma-BHC	9.7 U	U	ug/kg	9.7	0.80	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
alpha-Chlordane	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
gamma-Chlordane	9.7 U	U	ug/kg	9.7	1.7	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
4,4'-DDD	18.8 U	U	ug/kg	18.8	1.5	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
4,4'-DDE	5.0J	J	ug/kg	18.8	2.6	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
4,4'-DDT	18.8 U	U	ug/kg	18.8	2.2	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Dieldrin	18.8 U	U	ug/kg	18.8	2.2	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Endosulfan I	9.7 U	U	ug/kg	9.7	1.2	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Endosulfan II	18.8 U	U	ug/kg	18.8	3.9	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Endosulfan Sulfate	18.8 U	U	ug/kg	18.8	1.3	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Endrin	18.8 U	U	ug/kg	18.8	1.4	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Endrin Aldehyde	18.8 U	U	ug/kg	18.8	2.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Endrin Ketone	18.8 U	U	ug/kg	18.8	2.6	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Heptachlor	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Heptachlor Epoxide	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Methoxychlor	18.8 U	U	ug/kg	18.8	2.5	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Toxaphene	199 U	U	ug/kg	199	33.1	SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	60.7		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
Tetrachloro-m-xylene (S)	63.5		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/27/17 23:55	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	14.5		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	85.5		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	7.2		mg/kg	1.6	0.52	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:08	ZMC	A1
Lead, Total	26.5		mg/kg	1.0	0.34	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:08	ZMC	A1

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951010**  
Sample ID: **SB-22 (0'-0.5')**

Date Collected: 8/18/2017 09:35 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Project Coordinator

### ALS Environmental Laboratory Locations Across North America

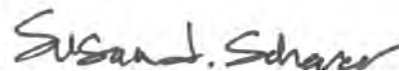
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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951013** Date Collected: 8/18/2017 09:41 Matrix: Solid  
Sample ID: **SB-22 (1.5'-2.0')** Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>WET CHEMISTRY</b>										
Moisture	24.2		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	75.8		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	8.7		mg/kg	1.8	0.61	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:12	ZMC	A1
Lead, Total	19.9		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:12	ZMC	A1



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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951014**  
Sample ID: **SB-22 (4.5'-5.0')**

Date Collected: 8/18/2017 09:43 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.9 U	U	ug/kg	10.9	3.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
alpha-BHC	10.9 U	U	ug/kg	10.9	0.96	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
beta-BHC	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
delta-BHC	10.9 U	U	ug/kg	10.9	0.84	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
gamma-BHC	10.9 U	U	ug/kg	10.9	0.90	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
alpha-Chlordane	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
gamma-Chlordane	10.9 U	U	ug/kg	10.9	1.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
4,4'-DDD	21.2 U	U	ug/kg	21.2	1.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
4,4'-DDE	21.2 U	U	ug/kg	21.2	2.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
4,4'-DDT	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Dieldrin	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Endosulfan I	10.9 U	U	ug/kg	10.9	1.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Endosulfan II	21.2 U	U	ug/kg	21.2	4.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Endosulfan Sulfate	21.2 U	U	ug/kg	21.2	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Endrin	21.2 U	U	ug/kg	21.2	1.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Endrin Aldehyde	21.2 U	U	ug/kg	21.2	2.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Endrin Ketone	21.2 U	U	ug/kg	21.2	3.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Heptachlor	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Heptachlor Epoxide	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Methoxychlor	21.2 U	U	ug/kg	21.2	2.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Toxaphene	225 U	U	ug/kg	225	37.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	64.1		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
Tetrachloro-m-xylene (S)	70		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:11	RWS	B
<b>WET CHEMISTRY</b>										
Moisture	22.2		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	B
Total Solids	77.8		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	B
<b>METALS</b>										
Arsenic, Total	6.4		mg/kg	1.8	0.61	SW846 6020A	8/25/17 01:20 LXC	8/25/17 11:35	ZMC	B1
Lead, Total	9.9		mg/kg	1.2	0.40	SW846 6020A	8/25/17 01:20 LXC	8/25/17 11:35	ZMC	B1

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951014**  
Sample ID: **SB-22 (4.5'-5.0')**

Date Collected: 8/18/2017 09:43 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer  
Project Coordinator

### ALS Environmental Laboratory Locations Across North America

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951015**  
Sample ID: **SB-22 (6.5'-7.0')**

Date Collected: 8/18/2017 09:48 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.0 U	U	ug/kg	11.0	3.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
alpha-BHC	11.0 U	U	ug/kg	11.0	0.97	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
beta-BHC	11.0 U	U	ug/kg	11.0	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
delta-BHC	11.0 U	U	ug/kg	11.0	0.84	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
gamma-BHC	11.0 U	U	ug/kg	11.0	0.90	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
alpha-Chlordane	11.0 U	U	ug/kg	11.0	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
gamma-Chlordane	11.0 U	U	ug/kg	11.0	1.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
4,4'-DDD	21.3 U	U	ug/kg	21.3	1.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
4,4'-DDE	21.3 U	U	ug/kg	21.3	2.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
4,4'-DDT	13.8J	J	ug/kg	21.3	2.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Dieldrin	21.3 U	U	ug/kg	21.3	2.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Endosulfan I	11.0 U	U	ug/kg	11.0	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Endosulfan II	21.3 U	U	ug/kg	21.3	4.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Endosulfan Sulfate	21.3 U	U	ug/kg	21.3	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Endrin	21.3 U	U	ug/kg	21.3	1.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Endrin Aldehyde	21.3 U	U	ug/kg	21.3	2.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Endrin Ketone	21.3 U	U	ug/kg	21.3	3.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Heptachlor	11.0 U	U	ug/kg	11.0	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Heptachlor Epoxide	11.0 U	U	ug/kg	11.0	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Methoxychlor	21.3 U	U	ug/kg	21.3	2.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Toxaphene	226 U	U	ug/kg	226	37.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.4		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
Tetrachloro-m-xylene (S)	83.5		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:27	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	25.5		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	74.5		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	8.6		mg/kg	1.9	0.63	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Barium, Total	32.0		mg/kg	3.2	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Cadmium, Total	0.63 U	U	mg/kg	0.63	0.21	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Chromium, Total	27.9		mg/kg	1.3	0.42	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Copper, Total	25.8		mg/kg	3.2	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Lead, Total	13.5		mg/kg	1.3	0.42	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Manganese, Total	901		mg/kg	3.2	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Mercury, Total	0.21		mg/kg	0.057	0.018	SW846 7471B	8/24/17 02:45 AXC	8/24/17 06:10	AXC	A2

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**ANALYTICAL RESULTS**

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951015**  
Sample ID: **SB-22 (6.5'-7.0')**Date Collected: 8/18/2017 09:48 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Nickel, Total	32.7		mg/kg	3.2	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1
Vanadium, Total	48.4		mg/kg	1.3	0.42	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:16	ZMC	A1

Ms. Susan J Scherer  
Project Coordinator**ALS Environmental Laboratory Locations Across North America**Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951016**

Date Collected: 8/18/2017 09:53

Matrix: Solid

Sample ID: **SB-22 (9.5'-10.0')**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	10.9 U	U	ug/kg	10.9	3.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
alpha-BHC	10.9 U	U	ug/kg	10.9	0.96	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
beta-BHC	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
delta-BHC	10.9 U	U	ug/kg	10.9	0.83	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
gamma-BHC	10.9 U	U	ug/kg	10.9	0.90	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
alpha-Chlordane	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
gamma-Chlordane	10.9 U	U	ug/kg	10.9	1.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
4,4'-DDD	21.2 U	U	ug/kg	21.2	1.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
4,4'-DDE	21.2 U	U	ug/kg	21.2	2.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
4,4'-DDT	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Dieldrin	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Endosulfan I	10.9 U	U	ug/kg	10.9	1.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Endosulfan II	21.2 U	U	ug/kg	21.2	4.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Endosulfan Sulfate	21.2 U	U	ug/kg	21.2	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Endrin	21.2 U	U	ug/kg	21.2	1.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Endrin Aldehyde	21.2 U	U	ug/kg	21.2	2.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Endrin Ketone	21.2 U	U	ug/kg	21.2	3.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Heptachlor	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Heptachlor Epoxide	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Methoxychlor	21.2 U	U	ug/kg	21.2	2.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Toxaphene	225 U	U	ug/kg	225	37.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	88.9		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
Tetrachloro-m-xylene (S)	92.8		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:42	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	25.1		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	74.9		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	8.6		mg/kg	1.9	0.62	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Barium, Total	49.7		mg/kg	3.1	0.99	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Cadmium, Total	0.62 U	U	mg/kg	0.62	0.20	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Chromium, Total	17.7		mg/kg	1.2	0.41	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Copper, Total	26.6		mg/kg	3.1	0.99	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Lead, Total	18.0		mg/kg	1.2	0.41	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Manganese, Total	1350		mg/kg	3.1	0.99	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Mercury, Total	0.18		mg/kg	0.061	0.019	SW846 7471B	8/24/17 02:45 AXC	8/24/17 06:11	AXC	A2

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**ANALYTICAL RESULTS**

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951016**

Date Collected: 8/18/2017 09:53

Matrix: Solid

Sample ID: **SB-22 (9.5'-10.0')**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Nickel, Total	22.7		mg/kg	3.1	0.99	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1
Vanadium, Total	55.3		mg/kg	1.2	0.41	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:20	ZMC	A1

Ms. Susan J Scherer

Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951017**  
Sample ID: **SB-22 (14.5'-15.0')**

Date Collected: 8/18/2017 08:58 Matrix: Solid  
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	11.4 U	U	ug/kg	11.4	3.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
alpha-BHC	11.4 U	U	ug/kg	11.4	1.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
beta-BHC	11.4 U	U	ug/kg	11.4	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
delta-BHC	11.4 U	U	ug/kg	11.4	0.87	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
gamma-BHC	11.4 U	U	ug/kg	11.4	0.94	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
alpha-Chlordane	11.4 U	U	ug/kg	11.4	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
gamma-Chlordane	11.4 U	U	ug/kg	11.4	1.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
4,4'-DDD	22.1 U	U	ug/kg	22.1	1.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
4,4'-DDE	22.1 U	U	ug/kg	22.1	3.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
4,4'-DDT	22.1 U	U	ug/kg	22.1	2.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Dieldrin	22.1 U	U	ug/kg	22.1	2.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Endosulfan I	11.4 U	U	ug/kg	11.4	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Endosulfan II	22.1 U	U	ug/kg	22.1	4.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Endosulfan Sulfate	22.1 U	U	ug/kg	22.1	1.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Endrin	22.1 U	U	ug/kg	22.1	1.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Endrin Aldehyde	22.1 U	U	ug/kg	22.1	2.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Endrin Ketone	22.1 U	U	ug/kg	22.1	3.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Heptachlor	11.4 U	U	ug/kg	11.4	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Heptachlor Epoxide	11.4 U	U	ug/kg	11.4	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Methoxychlor	22.1 U	U	ug/kg	22.1	2.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Toxaphene	235 U	U	ug/kg	235	38.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	51.2		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
Tetrachloro-m-xylene (S)	68.9		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 00:58	RWS	A
<b>WET CHEMISTRY</b>										
Moisture	26.4		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	73.6		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
<b>METALS</b>										
Arsenic, Total	7.4		mg/kg	2.0	0.65	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Barium, Total	20.4		mg/kg	3.3	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Cadmium, Total	0.65 U	U	mg/kg	0.65	0.22	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Chromium, Total	12.4		mg/kg	1.3	0.43	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Copper, Total	11.5		mg/kg	3.3	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Lead, Total	6.8		mg/kg	1.3	0.43	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Manganese, Total	451		mg/kg	3.3	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Mercury, Total	0.13		mg/kg	0.059	0.019	SW846 7471B	8/24/17 02:45 AXC	8/24/17 06:12	AXC	A2

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**ANALYTICAL RESULTS**

Workorder: 2255951 ERM153|JEFFERSON COUNTY WV

Lab ID: **2255951017**

Date Collected: 8/18/2017 08:58

Matrix: Solid

Sample ID: **SB-22 (14.5'-15.0')**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Nickel, Total	13.0		mg/kg	3.3	1.0	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1
Vanadium, Total	41.4		mg/kg	1.3	0.43	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:23	ZMC	A1

Ms. Susan J Scherer

Project Coordinator

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34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS**

Page 7 of 7

Courier: \_\_\_\_\_

Tracking #: \_\_\_\_\_



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[illegible]

\*\*\*\*\* WHITE - ORIGINAL CANARY - CUSTOMER COPY \*\*\*\*\*

Rev 01-2013





34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5341  
F. 717-944-1430

Environmental

# CHAIN OF CUSTODY/

## REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 2 of 2

Counter:

Treckling #:

Co. Name: **ERM**

Contact (Print or): **DAVE CONNELLY**

Address: **204 CHASE DRIVE**

Phone: **301 757 4777**

Bill to (if different than Report to):

PO#:

Project Name/ID:

ALS Quote #:

TAT: ☒ Normal-Standard TAT is 10-12 business days.  
☐ Rush-Subject to ALS approval and surcharges.

Email? ☒ Y ☐ N

Fax? ☐ Y ☐ N

Sample Description/Location  
(as it will appear on the lab report)

COC Comments

Sample Date

Military Time

\*\*Matrix

Enter Number of Containers Per Analysis

### ANALYSES/METHOD REQUESTED

Receipt Information (Completed by Sampler)		Correct containers?		Correct sample volume?		Correct preservation?		Headspace/Volatiles?		Container in good condition?	
Personal to	cooler Temp: 3°	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Therm. ID: 309	No. of Containers:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Notes:											

ALS FIELD SERVICES	
Pickup	Other:
Labor	Composite Sampling
Rental Equipment	

Data Deliverables		SMA		SMA Samples	
Standard	CLP-like	Form 700	yes	Collected in?	MD
NJ-Reduced	NJ-Full	yes	yes	NJ	
Other		yes	yes	NY	
PA		yes	yes	PA	

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 <b>DAVE CONNELLY</b>	8/27/17	0805	2 <b>ALS</b>	8-22	805
3 <b>ALS</b>	8/22	1650	4 <b>gma</b>	08/22	1650
5			6		
7			8		
9			10		

Project Comments: **None**

COPIES: WHITE - ORIGINAL CANARY - CUSTOMER COPY

\* G-Grab; C-Composite \*\* Matrix: Air-Air; DW-Drinking Water; GW-Groundwater; OL-Other Liquid; SL-Sludge; SO-Soil; WP-Wipe; WW-Wastewater

\*\*\* Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic; Container Size: 250ml, 500ml, 1L, 9oz., etc. Preservatives: HCl, HNO3, NaOH, etc.





34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**Environmental**

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Page 3 of 9  
Counter: \_\_\_\_\_  
Tracking #: \_\_\_\_\_

950C#

Co. Name: **ERM**

Contact (Please Print): **Pave Connelly**  
Address: **204 CHASE DRIVE**

Phone: \_\_\_\_\_

Bill to (if different from Report to): \_\_\_\_\_

PO#: \_\_\_\_\_

Project Name#: \_\_\_\_\_

ALS Quote #: \_\_\_\_\_

TAT: ☐ Normal/Standard TAT is 10-12 business days.  
☐ Rush-Subject to ALS approval and surcharges.

Email? ☐ Y ☐ N

Fax? ☐ Y ☐ N

Sample Description/Location  
(as it will appear on the lab report)

COC Comments

Sample Date

Military Time

1 SB-22 (0.0-5')

HOLD

8/18/17 0735

G S

2 SB-22 (0.5-1.0')

HOLD

8/18/17 0737

G S

3 SB-22 (1.0-1.5')

HOLD

8/18/17 0739

G S

4 SB-22 (1.5-2.0')

HOLD

8/18/17 0741

G S

5 SB-22 (4.5-5.0')

HOLD

8/18/17 0743

G S

6 SB-22 (6.5-7.0')

HOLD

8/18/17 0748

G S

7 SB-22 (9.5-10.6')

HOLD

8/18/17 0753

G S

8 SB-22 (14.5-15.0')

HOLD

8/18/17 0758

G S

SAMPLED BY (Please Print): **Ryan Baister**

Project Comments: **DO NOT RUN Formaldehyde**

Relinquished By / Company Name

Date

Time

Received By / Company Name

Date

Time

1 **Ryan Baister** **ALS B2** **8-22-17** **150** **2** **ALS B2** **8-22** **805**

3 **Ryan Baister** **ALS B2** **8-22-17** **150** **4** **gml. AS** **8-22** **1600**

5

6

8

10

DO NOT WRITE

Receipt Information (Required by Sample Tracking)		Container Type		Container Size		Preservatives	
Thermal Tr.		gml. AS		30		Therm. ID: 309	
Cooler Temp: 30		No. of Coolers: 1		Notes: _____		Circle appropriate Y or N.	
Correct containers?	Correct sample volume?	Correct preservation?	Headspace/Volatiles?	Container in good condition?	COC labels complete/accurate?	Rinsed on ice?	(If present) Seats intact?
Y	Y	Y	Y	Y	Y	Y	Y

ANALYSIS METHOD REQUESTED		Enter Number of Containers Per Analysis	
Formaldehyde		6	
LEAD & ARSENIC		6	
Residues 8081A		6	
6010A		6	
C, Pb, As, B, T, V, W, Cd		6	

ALS FIELD SERVICES		Data Deliverables		SMA		SMA Samples Collected In?	
Pickup	Labor	Standard	CLP-like	Form 70	MD	MD	MD
Composites Sampling	Rental Equipment	NJ-Reduced	NJ-Full	yes	yes	yes	yes
Other:		Other		yes	yes	yes	yes

Caples: WHITE - ORIGINAL CANARY - CUSTOMER COPY

\* G-Gmb; C-Composites

\*\*Matrix: AL-Air; DW-Drinking Water; GW-Groundwater; OL-Other Liquid; SL-Sludge; SO-Soil; WP-Wipe; WW-Wastewater

\*\*\*Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic; Container Size: 250ml, 1L, 5oz, etc. Preservative: HCl, HNO3, NaOH, etc.



Improving the environment, one client at a time...

REI Consultants, Inc.  
PO Box 286  
Beaver, WV 25813  
TEL: (304) 255-2500  
Website: [www.reiclabs.com](http://www.reiclabs.com)

3029-C Peters Creek Road  
Roanoke, VA 24019  
TEL: 540.777.1276

1557 Commerce Road, Suite 201  
Verona, VA 24482  
TEL: 540.248.0183

16 Commerce Drive  
Westover, WV 26501  
TEL: 304.241.5861

Wednesday, August 23, 2017

Mr. David Connelly  
ENVIRONMENTAL RESOURCES MANAGEMENT  
204 CHASE DR  
HURRICANE, WV 25526

TEL: (304) 757-4777

FAX:

RE: JEFFERSON ORCHARDS

Work Order #: 17082960

Dear Mr. David Connelly:

REI Consultants, Inc. received 3 sample(s) on 8/21/2017 for the analyses presented in the following report.

Sincerely,

Jimmy Suttle  
Project Manager  
(304) 250-6234



---

**Client:** ENVIRONMENTAL RESOURCES MANAGEMENT**Project:** JEFFERSON ORCHARDS

---

The analytical results presented in this report were produced using documented laboratory SOPs that incorporate appropriate quality control procedures as described in the applicable methods. Verification of required sample preservation (as required) is recorded on associated laboratory logs. Any deviation from compliance or method modification is identified within the body of this report by a qualifier footnote which is defined at the bottom of this page.

All sample results for solid samples are reported on an "as-received" wet weight basis unless otherwise noted.

Results reported for sums of individual parameters, such as TTHM and HAA5, may vary slightly from the sum of the individual parameter results, due to rounding of individual results, as required by EPA.

The test results in this report meet all NELAP and/or VELAP requirements for parameters clearly designated as PA, VA, PA/VA, or VELAP in the column labeled NELAP.

Please note if the sample collection time is not provided on the Chain of Custody, the default recording will be 0:00:00. This may cause some tests to be apparently analyzed out of hold.

All tests performed by REIC Service Centers are designated by an annotation on the test code. All other tests were performed by REIC's Main Laboratory in Beaver, WV.

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**DEFINITIONS:**

MCL: Maximum Contaminant Level

MDL: Method Detection Limit; The lowest concentration of analyte that can be detected by the method in the applicable matrix.

Mg/Kg or mg/L: Units of part per million (PPM) - milligram per Kilogram (weight/weight) or milligram per Liter (weight/volume).

NA: Not Applicable

ND: Not Detected at the PQL or MDL

PQL: Practical Quantitation Limit; The lowest verified limit to which data is quantified without qualifications. Analyte concentrations below PQL are reported either as ND or as a number with a "J" qualifier.

Qual: Qualifier that applies to the analyte reported.

TIC: Tentatively Identified Compound, Estimated Concentration denoted by "J" qualifier.

Ug/Kg or ug/L: Units of part per billion (PPB) - microgram per kilogram (weight/weight) or microgram per liter (weight/volume).

**QUALIFIERS:**

X: Reported value exceeds required MCL

B: Analyte detected in the associated Method Blank at a concentration > 1/2 the PQL

E: Analyte concentration reported that exceeds the upper calibration standard. Greater uncertainty is associated with this result and data should be considered estimated.

H: Holding time for preparation or analysis has been exceeded.

J: Analyte concentration is reported, and is less than the PQL and greater than or equal to the MDL. The result reported is an estimate.

S: % REC (% recovery) exceeds control limits

**CERTIFICATIONS:**

Beaver, WV: WVDHHR 00412CM, WVDEP 060, VADCLS 00281, KYDEP 90039, NCDWQ 466, PADEP 68-00839, VADCLS(VELAP) 460148

Bioassay (Beaver, WV): WVDEP 060, VADCLS(VELAP) 460148, PADEP 68-00839

Roanoke, VA: VADCLS(VELAP) 460150

Verona, VA: VADCLS(VELAP) 460151

Morgantown, WV: WVDHHR 003112M, WVDEP 387

**WO#: 17082960**

**Collection Date:** 8/18/2017 9:53:00 AM  
**Date Received:** 8/21/2017  
**Matrix:** Soil  
**Site ID:** WV

Analysis	Result	MDL	PQL	MCL	Qual	Units	Date Analyzed	NELAP
FORMALDEHYDE			Method: NIOSH 3500(M)				Analyst: SF	
Formaldehyde	ND	NA	8.00	NA		mg/Kg	8/22/2017 1:14 PM	

**Notes:**

The reporting limit is elevated as a result of dilutions required due to matrix interference.

**WO#: 17082960**

**Original**

**Collection Date:** 8/18/2017 9:48:00 AM  
**Date Received:** 8/21/2017  
**Matrix:** Soil  
**Site ID:** WV

## FORMALDEHYDE

**Method: NIOSH 3500(M)**

**Analyst: SF**

Formaldehyde

ND

NA

4.00

NA

mg/Kg

8/22/2017 1:14 PM



**WO#: 17082960**

**Original**

**Collection Date:** 8/18/2017 9:58:00 AM

**Date Received:** 8/21/2017

Matrix: Soil

Site ID: WV

## FORMALDEHYDE

**Method: NIOSH 3500(M)**

**Analyst: SF**

Formaldehyde	ND	NA	8.00	NA	mg/Kg	8/22/2017 1:15 PM
--------------	----	----	------	----	-------	-------------------

The reporting limit is elevated as a result of dilutions required due to matrix interference.



Improving the environment, one client at a time...

REI Consultants, Inc.  
PO Box 286  
Beaver, WV 25813  
TEL: (304)255-2500  
Website: www.reiclabs.com

## Sample Receipt Checklist

Client Name:	<b>ERM006</b>			Work Order Number:	<b>17082960</b>
RCPNo:	<b>1</b>	Date and Time Received:	<b>8/21/2017 3:07:32 PM</b>	Received by:	<b>Chuck Belcher</b>
Completed By:	<b>Kim Pack</b>	Reviewed By:	<b>Jimmy Suttle</b>		
Completed Date:	<b>8/21/2017 3:14:16 PM</b>	Reviewed Date:	<b>8/22/2017 7:42 AM</b>		

### Carrier Name: REIC

1.	Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
2.	Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
3.	Are matrices correctly identified on Chain of custody?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
4.	Is it clear what analyses were requested?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5.	Custody seals intact?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
6.	Samples in proper container type and preservative?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7.	Were correct preservatives noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
8.	Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9.	Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10.	Were container labels complete?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11.	All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12.	Was an attempt made to cool the samples?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13.	Sample Temp. taken and recorded upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	To 1.4 °C
14.	Water - Were bubbles absent in VOC vials?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No Vials <input checked="" type="checkbox"/>
15.	Are Samples considered acceptable?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
16.	COC filled out properly?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

## Client Notification/Response

Client Name:	<b>ERM006</b>			Work Order Number:	<b>17082960</b>
Comment:					
Client Contacted:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	Person Contacted:	
Contact Mode:	Phone <input type="checkbox"/>	Fax: <input type="checkbox"/>	Email: <input type="checkbox"/>	In Person: <input type="checkbox"/>	
Date Contacted:	Contacted By:				
Regarding:					
Client Instructions:					
Corrective Action:					



**ALS Environmental**



34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ [www.alsglobal.com](http://www.alsglobal.com)

NELAP Certifications: NJ PA010, NY 11759, PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343

August 28, 2017

Mr. David Connelly  
Environmental Resource Management (ERM)-WV  
204 Chase Drive  
Hurricane, WV 25526

## Certificate of Analysis

Project Name: **2017-JEFFERSON COUNTY**

Workorder: **2254893**

Purchase Order:

Workorder ID: **ERM145|JEFFERSON COUNTY WV**

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 17, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Ms. Susan J Scherer  
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2254893001	Residential Well	Ground Water	8/15/2017 14:10	8/17/2017 16:44	Collected by Client
2254893002	Packing Shed Well	Ground Water	8/15/2017 14:45	8/17/2017 16:44	Collected by Client
2254893003	DUP-1	Ground Water	8/15/2017 07:00	8/17/2017 16:44	Collected by Client
2254893004	TB-1	Water	8/17/2017 16:44	8/17/2017 16:44	Collected by Client
2254893005	ER-1	Water	8/16/2017 16:50	8/17/2017 16:44	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893001**  
Sample ID: **Residential Well**

Date Collected: 8/15/2017 14:10 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
Acetone	10.0 U	U	ug/L	10.0	3.1	SW846 8260B		8/22/17 04:25	CJG	C
Benzene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 04:25	CJG	C
Bromochloromethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 04:25	CJG	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/22/17 04:25	CJG	C
Bromoform	1.0 U	U	ug/L	1.0	0.40	SW846 8260B		8/22/17 04:25	CJG	C
Bromomethane	1.0 U	U	ug/L	1.0	0.39	SW846 8260B		8/22/17 04:25	CJG	C
2-Butanone	10.0 U	U	ug/L	10.0	1.8	SW846 8260B		8/22/17 04:25	CJG	C
Carbon Disulfide	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 04:25	CJG	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 04:25	CJG	C
Chlorobenzene	0.36J	J,1	ug/L	1.0	0.19	SW846 8260B		8/22/17 04:25	CJG	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/22/17 04:25	CJG	C
Chloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:25	CJG	C
Chloroform	0.38J	J	ug/L	1.0	0.21	SW846 8260B		8/22/17 04:25	CJG	C
Chloromethane	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 04:25	CJG	C
Cyclohexane	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 04:25	CJG	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	1.5	SW846 8260B		8/22/17 04:25	CJG	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/22/17 04:25	CJG	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.38	SW846 8260B		8/22/17 04:25	CJG	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.25	SW846 8260B		8/22/17 04:25	CJG	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/22/17 04:25	CJG	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:25	CJG	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/22/17 04:25	CJG	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 04:25	CJG	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 04:25	CJG	C
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 04:25	CJG	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/22/17 04:25	CJG	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 04:25	CJG	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 04:25	CJG	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 04:25	CJG	C
Ethylbenzene	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/22/17 04:25	CJG	C
Freon 113	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/22/17 04:25	CJG	C
2-Hexanone	5.0 U	U	ug/L	5.0	1.3	SW846 8260B		8/22/17 04:25	CJG	C
Isopropylbenzene	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/22/17 04:25	CJG	C
Methyl acetate	2.0 U	U	ug/L	2.0	0.32	SW846 8260B		8/22/17 04:25	CJG	C
Methyl cyclohexane	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/22/17 04:25	CJG	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:25	CJG	C

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893001**  
Sample ID: **Residential Well**

Date Collected: 8/15/2017 14:10 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	1.5	SW846 8260B		8/22/17 04:25	CJG	C
Methylene Chloride	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/22/17 04:25	CJG	C
Styrene	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 04:25	CJG	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/22/17 04:25	CJG	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	0.35	SW846 8260B		8/22/17 04:25	CJG	C
Toluene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 04:25	CJG	C
Total Xylenes	3.0 U	U	ug/L	3.0	0.66	SW846 8260B		8/22/17 04:25	CJG	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.93	SW846 8260B		8/22/17 04:25	CJG	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.82	SW846 8260B		8/22/17 04:25	CJG	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/22/17 04:25	CJG	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:25	CJG	C
Trichloroethene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:25	CJG	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 04:25	CJG	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/22/17 04:25	CJG	C
o-Xylene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:25	CJG	C
mp-Xylene	2.0 U	U	ug/L	2.0	0.52	SW846 8260B		8/22/17 04:25	CJG	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	119		%	62 - 133		SW846 8260B			8/22/17 04:25	CJG C
4-Bromofluorobenzene (S)	103		%	79 - 114		SW846 8260B			8/22/17 04:25	CJG C
Dibromofluoromethane (S)	117	2	%	78 - 116		SW846 8260B			8/22/17 04:25	CJG C
Toluene-d8 (S)	131	3	%	76 - 127		SW846 8260B			8/22/17 04:25	CJG C
<b>PESTICIDES</b>										
Aldrin	0.019 U	U	ug/L	0.019	0.0048	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
alpha-BHC	0.019 U	U	ug/L	0.019	0.0019	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
beta-BHC	0.019 U	U	ug/L	0.019	0.0076	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
delta-BHC	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
gamma-BHC	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
alpha-Chlordane	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
gamma-Chlordane	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
4,4'-DDD	0.019 U	U	ug/L	0.019	0.0067	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
4,4'-DDE	0.019 U	U	ug/L	0.019	0.0067	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
4,4'-DDT	0.019 U	U	ug/L	0.019	0.0057	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
Dieldrin	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
Endosulfan I	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
Endosulfan II	0.019 U	U	ug/L	0.019	0.0057	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
Endosulfan Sulfate	0.019 U	U	ug/L	0.019	0.0038	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A
Endrin	0.019 U	U	ug/L	0.019	0.0076	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:37	RWS A

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893001**  
Sample ID: **Residential Well**

Date Collected: 8/15/2017 14:10 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Endrin Aldehyde	0.019 U	U	ug/L	0.019	0.0095	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Endrin Ketone	0.019 U	U	ug/L	0.019	0.0038	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Heptachlor	0.019 U	U	ug/L	0.019	0.0029	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Heptachlor Epoxide	0.019 U	U	ug/L	0.019	0.0038	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Methoxychlor	0.019 U	U	ug/L	0.019	0.0086	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Toxaphene	0.95 U	U	ug/L	0.95	0.18	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
Decachlorobiphenyls (S)	42.5		%	30 - 140		SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	
Tetrachloro-m-xylene (S)	78.8		%	30 - 123		SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:37	RWS	A	

Ms. Susan J Scherer  
Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893002**  
Sample ID: **Packing Shed Well**

Date Collected: 8/15/2017 14:45 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
Acetone	10.0 U	U	ug/L	10.0	3.1	SW846 8260B		8/22/17 04:46	CJG	C
Benzene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 04:46	CJG	C
Bromochloromethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 04:46	CJG	C
Bromodichloromethane	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/22/17 04:46	CJG	C
Bromoform	1.0 U	U	ug/L	1.0	0.40	SW846 8260B		8/22/17 04:46	CJG	C
Bromomethane	1.0 U	U	ug/L	1.0	0.39	SW846 8260B		8/22/17 04:46	CJG	C
2-Butanone	10.0 U	U	ug/L	10.0	1.8	SW846 8260B		8/22/17 04:46	CJG	C
Carbon Disulfide	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 04:46	CJG	C
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 04:46	CJG	C
Chlorobenzene	0.32J	J,2	ug/L	1.0	0.19	SW846 8260B		8/22/17 04:46	CJG	C
Chlorodibromomethane	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/22/17 04:46	CJG	C
Chloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:46	CJG	C
Chloroform	0.66J	J	ug/L	1.0	0.21	SW846 8260B		8/22/17 04:46	CJG	C
Chloromethane	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 04:46	CJG	C
Cyclohexane	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 04:46	CJG	C
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	1.5	SW846 8260B		8/22/17 04:46	CJG	C
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/22/17 04:46	CJG	C
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.38	SW846 8260B		8/22/17 04:46	CJG	C
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.25	SW846 8260B		8/22/17 04:46	CJG	C
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/22/17 04:46	CJG	C
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:46	CJG	C
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/22/17 04:46	CJG	C
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 04:46	CJG	C
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 04:46	CJG	C
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 04:46	CJG	C
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/22/17 04:46	CJG	C
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 04:46	CJG	C
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 04:46	CJG	C
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 04:46	CJG	C
Ethylbenzene	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/22/17 04:46	CJG	C
Freon 113	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/22/17 04:46	CJG	C
2-Hexanone	5.0 U	U	ug/L	5.0	1.3	SW846 8260B		8/22/17 04:46	CJG	C
Isopropylbenzene	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/22/17 04:46	CJG	C
Methyl acetate	2.0 U	U	ug/L	2.0	0.32	SW846 8260B		8/22/17 04:46	CJG	C
Methyl cyclohexane	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/22/17 04:46	CJG	C
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:46	CJG	C

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893002**  
Sample ID: **Packing Shed Well**

Date Collected: 8/15/2017 14:45 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	1.5	SW846 8260B		8/22/17 04:46	CJG	C
Methylene Chloride	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/22/17 04:46	CJG	C
Styrene	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 04:46	CJG	C
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/22/17 04:46	CJG	C
Tetrachloroethene	1.0 U	U	ug/L	1.0	0.35	SW846 8260B		8/22/17 04:46	CJG	C
Toluene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 04:46	CJG	C
Total Xylenes	3.0 U	U	ug/L	3.0	0.66	SW846 8260B		8/22/17 04:46	CJG	C
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.93	SW846 8260B		8/22/17 04:46	CJG	C
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.82	SW846 8260B		8/22/17 04:46	CJG	C
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/22/17 04:46	CJG	C
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:46	CJG	C
Trichloroethene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:46	CJG	C
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 04:46	CJG	C
Vinyl Chloride	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/22/17 04:46	CJG	C
o-Xylene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 04:46	CJG	C
mp-Xylene	2.0 U	U	ug/L	2.0	0.52	SW846 8260B		8/22/17 04:46	CJG	C
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	108		%	62 - 133		SW846 8260B			8/22/17 04:46	CJG C
4-Bromofluorobenzene (S)	106		%	79 - 114		SW846 8260B			8/22/17 04:46	CJG C
Dibromofluoromethane (S)	86.8		%	78 - 116		SW846 8260B			8/22/17 04:46	CJG C
Toluene-d8 (S)	132	3	%	76 - 127		SW846 8260B			8/22/17 04:46	CJG C
<b>PESTICIDES</b>										
Aldrin	0.019 U	U	ug/L	0.019	0.0047	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
alpha-BHC	0.019 U	U	ug/L	0.019	0.0019	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
beta-BHC	0.019 U	U	ug/L	0.019	0.0075	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
delta-BHC	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
gamma-BHC	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
alpha-Chlordane	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
gamma-Chlordane	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
4,4'-DDD	0.019 U	U	ug/L	0.019	0.0066	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
4,4'-DDE	0.019 U	U	ug/L	0.019	0.0066	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
4,4'-DDT	0.019 U	U	ug/L	0.019	0.0057	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
Dieldrin	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
Endosulfan I	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
Endosulfan II	0.019 U	U	ug/L	0.019	0.0057	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
Endosulfan Sulfate	0.019 U	U	ug/L	0.019	0.0038	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A
Endrin	0.019 U	U	ug/L	0.019	0.0075	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:53	RWS A

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State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343**ANALYTICAL RESULTS**

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893002**  
Sample ID: **Packing Shed Well**Date Collected: 8/15/2017 14:45 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Endrin Aldehyde	0.019 U	U	ug/L	0.019	0.0094	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Endrin Ketone	0.019 U	U	ug/L	0.019	0.0038	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Heptachlor	0.019 U	U	ug/L	0.019	0.0028	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Heptachlor Epoxide	0.019 U	U	ug/L	0.019	0.0038	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Methoxychlor	0.019 U	U	ug/L	0.019	0.0085	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Toxaphene	0.94 U	U	ug/L	0.94	0.18	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
Decachlorobiphenyls (S)	28.8	1	%	30 - 140		SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	
Tetrachloro-m-xylene (S)	77.4		%	30 - 123		SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:53	RWS	A	

Ms. Susan J Scherer  
Project Coordinator**ALS Environmental Laboratory Locations Across North America**Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893003**  
Sample ID: **DUP-1**

Date Collected: 8/15/2017 07:00 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
Acetone	10.0 U	U	ug/L	10.0	3.1	SW846 8260B		8/24/17 03:56	CJG	D
Benzene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/24/17 03:56	CJG	D
Bromochloromethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/24/17 03:56	CJG	D
Bromodichloromethane	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/24/17 03:56	CJG	D
Bromoform	1.0 U	U	ug/L	1.0	0.40	SW846 8260B		8/24/17 03:56	CJG	D
Bromomethane	1.0 U	U	ug/L	1.0	0.39	SW846 8260B		8/24/17 03:56	CJG	D
2-Butanone	10.0 U	U	ug/L	10.0	1.8	SW846 8260B		8/24/17 03:56	CJG	D
Carbon Disulfide	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/24/17 03:56	CJG	D
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/24/17 03:56	CJG	D
Chlorobenzene	1.0 U	U	ug/L	1.0	0.19	SW846 8260B		8/24/17 03:56	CJG	D
Chlorodibromomethane	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/24/17 03:56	CJG	D
Chloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/24/17 03:56	CJG	D
Chloroform	1.5		ug/L	1.0	0.21	SW846 8260B		8/24/17 03:56	CJG	D
Chloromethane	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/24/17 03:56	CJG	D
Cyclohexane	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/24/17 03:56	CJG	D
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	1.5	SW846 8260B		8/24/17 03:56	CJG	D
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/24/17 03:56	CJG	D
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.38	SW846 8260B		8/24/17 03:56	CJG	D
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.25	SW846 8260B		8/24/17 03:56	CJG	D
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/24/17 03:56	CJG	D
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/24/17 03:56	CJG	D
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/24/17 03:56	CJG	D
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/24/17 03:56	CJG	D
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/24/17 03:56	CJG	D
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/24/17 03:56	CJG	D
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/24/17 03:56	CJG	D
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/24/17 03:56	CJG	D
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/24/17 03:56	CJG	D
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/24/17 03:56	CJG	D
Ethylbenzene	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/24/17 03:56	CJG	D
Freon 113	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/24/17 03:56	CJG	D
2-Hexanone	5.0 U	U	ug/L	5.0	1.3	SW846 8260B		8/24/17 03:56	CJG	D
Isopropylbenzene	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/24/17 03:56	CJG	D
Methyl acetate	2.0 U	U	ug/L	2.0	0.32	SW846 8260B		8/24/17 03:56	CJG	D
Methyl cyclohexane	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/24/17 03:56	CJG	D
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/24/17 03:56	CJG	D

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893003**  
Sample ID: **DUP-1**

Date Collected: 8/15/2017 07:00 Matrix: Ground Water  
Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	1.5	SW846 8260B		8/24/17 03:56	CJG	D
Methylene Chloride	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/24/17 03:56	CJG	D
Styrene	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/24/17 03:56	CJG	D
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/24/17 03:56	CJG	D
Tetrachloroethene	1.0 U	U	ug/L	1.0	0.35	SW846 8260B		8/24/17 03:56	CJG	D
Toluene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/24/17 03:56	CJG	D
Total Xylenes	3.0 U	U	ug/L	3.0	0.66	SW846 8260B		8/24/17 03:56	CJG	D
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.93	SW846 8260B		8/24/17 03:56	CJG	D
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.82	SW846 8260B		8/24/17 03:56	CJG	D
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/24/17 03:56	CJG	D
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/24/17 03:56	CJG	D
Trichloroethene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/24/17 03:56	CJG	D
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/24/17 03:56	CJG	D
Vinyl Chloride	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/24/17 03:56	CJG	D
o-Xylene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/24/17 03:56	CJG	D
mp-Xylene	2.0 U	U	ug/L	2.0	0.52	SW846 8260B		8/24/17 03:56	CJG	D
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	106		%	62 - 133		SW846 8260B			8/24/17 03:56	CJG D
4-Bromofluorobenzene (S)	106		%	79 - 114		SW846 8260B			8/24/17 03:56	CJG D
Dibromofluoromethane (S)	94.5		%	78 - 116		SW846 8260B			8/24/17 03:56	CJG D
Toluene-d8 (S)	106		%	76 - 127		SW846 8260B			8/24/17 03:56	CJG D
<b>PESTICIDES</b>										
Aldrin	0.020 U	U	ug/L	0.020	0.0049	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
alpha-BHC	0.020 U	U	ug/L	0.020	0.0020	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
beta-BHC	0.020 U	U	ug/L	0.020	0.0078	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
delta-BHC	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
gamma-BHC	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
alpha-Chlordane	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
gamma-Chlordane	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
4,4'-DDD	0.020 U	U	ug/L	0.020	0.0069	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
4,4'-DDE	0.020 U	U	ug/L	0.020	0.0069	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
4,4'-DDT	0.020 U	U	ug/L	0.020	0.0059	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
Dieldrin	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
Endosulfan I	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
Endosulfan II	0.020 U	U	ug/L	0.020	0.0059	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
Endosulfan Sulfate	0.020 U	U	ug/L	0.020	0.0039	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A
Endrin	0.020 U	U	ug/L	0.020	0.0078	SW846 8081B	8/21/17 17:50	JXD	8/23/17 22:22	RWS A

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**ALS Environmental**34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ [www.alsglobal.com](http://www.alsglobal.com)NELAP Certifications: NJ PA010, NY 11759, PA 22-293 DoD ELAP: A2LA 0818.01  
State Certifications: DE ID 11, MA PA0102, MD 128, VA 460157, WV 343**ANALYTICAL RESULTS**

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893003**

Date Collected: 8/15/2017 07:00

Matrix: Ground Water

Sample ID: **DUP-1**

Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Endrin Aldehyde	0.020 U	U	ug/L	0.020	0.0098	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Endrin Ketone	0.020 U	U	ug/L	0.020	0.0039	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Heptachlor	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Heptachlor Epoxide	0.020 U	U	ug/L	0.020	0.0039	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Methoxychlor	0.020 U	U	ug/L	0.020	0.0088	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Toxaphene	0.98 U	U	ug/L	0.98	0.19	SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Surrogate Recoveries	Results	Flag	Units	Limits		Method	Prepared	By	Analyzed	By	Cntr
Decachlorobiphenyls (S)	33.8		%	30 - 140		SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	
Tetrachloro-m-xylene (S)	74.6		%	30 - 123		SW846 8081B	8/21/17 17:50 JXD	8/23/17 22:22	RWS	A	

Ms. Susan J Scherer

Project Coordinator

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893004**

Date Collected: 8/17/2017 16:44

Matrix: Water

Sample ID: **TB-1**

Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS</b>										
Acetone	10.0 U	U	ug/L	10.0	3.1	SW846 8260B		8/22/17 05:52	CJG	A
Benzene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 05:52	CJG	A
Bromochloromethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 05:52	CJG	A
Bromodichloromethane	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/22/17 05:52	CJG	A
Bromoform	1.0 U	U	ug/L	1.0	0.40	SW846 8260B		8/22/17 05:52	CJG	A
Bromomethane	1.0 U	U	ug/L	1.0	0.39	SW846 8260B		8/22/17 05:52	CJG	A
2-Butanone	10.0 U	U	ug/L	10.0	1.8	SW846 8260B		8/22/17 05:52	CJG	A
Carbon Disulfide	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 05:52	CJG	A
Carbon Tetrachloride	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 05:52	CJG	A
Chlorobenzene	0.28J	J1	ug/L	1.0	0.19	SW846 8260B		8/22/17 05:52	CJG	A
Chlorodibromomethane	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/22/17 05:52	CJG	A
Chloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 05:52	CJG	A
Chloroform	1.0 U	U	ug/L	1.0	0.21	SW846 8260B		8/22/17 05:52	CJG	A
Chloromethane	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 05:52	CJG	A
Cyclohexane	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 05:52	CJG	A
1,2-Dibromo-3-chloropropane	7.0 U	U	ug/L	7.0	1.5	SW846 8260B		8/22/17 05:52	CJG	A
1,2-Dibromoethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/22/17 05:52	CJG	A
1,2-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.38	SW846 8260B		8/22/17 05:52	CJG	A
1,3-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.25	SW846 8260B		8/22/17 05:52	CJG	A
1,4-Dichlorobenzene	1.0 U	U	ug/L	1.0	0.27	SW846 8260B		8/22/17 05:52	CJG	A
Dichlorodifluoromethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 05:52	CJG	A
1,1-Dichloroethane	1.0 U	U	ug/L	1.0	0.28	SW846 8260B		8/22/17 05:52	CJG	A
1,2-Dichloroethane	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 05:52	CJG	A
1,1-Dichloroethene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 05:52	CJG	A
cis-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.32	SW846 8260B		8/22/17 05:52	CJG	A
trans-1,2-Dichloroethene	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/22/17 05:52	CJG	A
1,2-Dichloropropane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 05:52	CJG	A
cis-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.31	SW846 8260B		8/22/17 05:52	CJG	A
trans-1,3-Dichloropropene	1.0 U	U	ug/L	1.0	0.29	SW846 8260B		8/22/17 05:52	CJG	A
Ethylbenzene	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/22/17 05:52	CJG	A
Freon 113	1.0 U	U	ug/L	1.0	0.26	SW846 8260B		8/22/17 05:52	CJG	A
2-Hexanone	5.0 U	U	ug/L	5.0	1.3	SW846 8260B		8/22/17 05:52	CJG	A
Isopropylbenzene	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/22/17 05:52	CJG	A
Methyl acetate	2.0 U	U	ug/L	2.0	0.32	SW846 8260B		8/22/17 05:52	CJG	A
Methyl cyclohexane	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/22/17 05:52	CJG	A
Methyl t-Butyl Ether	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 05:52	CJG	A

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## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893004**

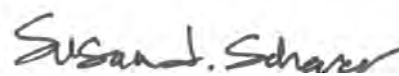
Date Collected: 8/17/2017 16:44

Matrix: Water

Sample ID: **TB-1**

Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
4-Methyl-2-Pentanone(MIBK)	5.0 U	U	ug/L	5.0	1.5	SW846 8260B		8/22/17 05:52	CJG	A
Methylene Chloride	1.0 U	U	ug/L	1.0	0.45	SW846 8260B		8/22/17 05:52	CJG	A
Styrene	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 05:52	CJG	A
1,1,2,2-Tetrachloroethane	1.0 U	U	ug/L	1.0	0.34	SW846 8260B		8/22/17 05:52	CJG	A
Tetrachloroethene	1.0 U	U	ug/L	1.0	0.35	SW846 8260B		8/22/17 05:52	CJG	A
Toluene	1.0 U	U	ug/L	1.0	0.23	SW846 8260B		8/22/17 05:52	CJG	A
Total Xylenes	3.0 U	U	ug/L	3.0	0.66	SW846 8260B		8/22/17 05:52	CJG	A
1,2,3-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.93	SW846 8260B		8/22/17 05:52	CJG	A
1,2,4-Trichlorobenzene	2.0 U	U	ug/L	2.0	0.82	SW846 8260B		8/22/17 05:52	CJG	A
1,1,1-Trichloroethane	1.0 U	U	ug/L	1.0	0.22	SW846 8260B		8/22/17 05:52	CJG	A
1,1,2-Trichloroethane	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 05:52	CJG	A
Trichloroethene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 05:52	CJG	A
Trichlorofluoromethane	1.0 U	U	ug/L	1.0	0.24	SW846 8260B		8/22/17 05:52	CJG	A
Vinyl Chloride	1.0 U	U	ug/L	1.0	0.30	SW846 8260B		8/22/17 05:52	CJG	A
o-Xylene	1.0 U	U	ug/L	1.0	0.33	SW846 8260B		8/22/17 05:52	CJG	A
mp-Xylene	2.0 U	U	ug/L	2.0	0.52	SW846 8260B		8/22/17 05:52	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	109		%	62 - 133		SW846 8260B			8/22/17 05:52	CJG A
4-Bromofluorobenzene (S)	82.8		%	79 - 114		SW846 8260B			8/22/17 05:52	CJG A
Dibromofluoromethane (S)	89.5		%	78 - 116		SW846 8260B			8/22/17 05:52	CJG A
Toluene-d8 (S)	117		%	76 - 127		SW846 8260B			8/22/17 05:52	CJG A



Ms. Susan J Scherer

Project Coordinator

### ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

## ANALYTICAL RESULTS

Workorder: 2254893 ERM145|JEFFERSON COUNTY WV

Lab ID: **2254893005**

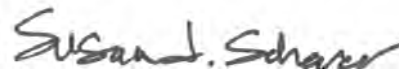
Date Collected: 8/16/2017 16:50

Matrix: Water

Sample ID: **ER-1**

Date Received: 8/17/2017 16:44

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
<b>PESTICIDES</b>										
Aldrin	0.021 U	U	ug/L	0.021	0.0052	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
alpha-BHC	0.021 U	U	ug/L	0.021	0.0021	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
beta-BHC	0.021 U	U	ug/L	0.021	0.0083	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
delta-BHC	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
gamma-BHC	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
alpha-Chlordane	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
gamma-Chlordane	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
4,4'-DDD	0.019J	J	ug/L	0.021	0.0073	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
4,4'-DDE	0.021 U	U	ug/L	0.021	0.0073	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
4,4'-DDT	0.19		ug/L	0.021	0.0063	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Dieldrin	0.011J	J	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Endosulfan I	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Endosulfan II	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Endosulfan Sulfate	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Endrin	0.021 U	U	ug/L	0.021	0.0083	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Endrin Aldehyde	0.021 U	U	ug/L	0.021	0.010	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Endrin Ketone	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Heptachlor	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Heptachlor Epoxide	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Methoxychlor	0.021 U	U	ug/L	0.021	0.0094	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Toxaphene	1.0 U	U	ug/L	1.0	0.20	SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	88.1		%	30 - 140		SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
Tetrachloro-m-xylene (S)	75.9		%	30 - 123		SW846 8081B	8/21/17 17:50 JXD	8/23/17 23:09	RWS	B
<b>METALS</b>										
Arsenic, Total	0.0033 U	U	mg/L	0.0033	0.0011	SW846 6020A	8/18/17 03:30 ZMC	8/18/17 04:40	ZMC	A1
Lead, Total	0.0022 U	U	mg/L	0.0022	0.00074	SW846 6020A	8/18/17 03:30 ZMC	8/18/17 04:40	ZMC	A1



Ms. Susan J Scherer

Project Coordinator

### ALS Environmental Laboratory Locations Across North America

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Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2254893001</b>	1	Residential Well	SW846 8260B	Chlorobenzene
The Method Blank for method SW846 8260B reported a value greater than the reporting level for the analyte Chlorobenzene.				
<b>2254893001</b>	2	Residential Well	SW846 8260B	Dibromofluoromethane
The surrogate Dibromofluoromethane for method SW846 8260B was outside of control limits. The % Recovery was reported as 117 and the control limits were 78 to 116. This result was reported at a dilution of 1.				
<b>2254893001</b>	3	Residential Well	SW846 8260B	Toluene-d8
The surrogate Toluene-d8 for method SW846 8260B was outside of control limits. The % Recovery was reported as 131 and the control limits were 76 to 127. This result was reported at a dilution of 1.				
<b>2254893002</b>	1	Packing Shed Well	SW846 8081B	Decachlorobiphenyls
The surrogate Decachlorobiphenyls for method SW846 8081B was outside of control limits. The % Recovery was reported as 28.8 and the control limits were 30 to 140. This result was reported at a dilution of 1.				
<b>2254893002</b>	2	Packing Shed Well	SW846 8260B	Chlorobenzene
The Method Blank for method SW846 8260B reported a value greater than the reporting level for the analyte Chlorobenzene.				
<b>2254893002</b>	3	Packing Shed Well	SW846 8260B	Toluene-d8
The surrogate Toluene-d8 for method SW846 8260B was outside of control limits. The % Recovery was reported as 132 and the control limits were 76 to 127. This result was reported at a dilution of 1.				
<b>2254893004</b>	1	TB-1	SW846 8260B	Chlorobenzene
The Method Blank for method SW846 8260B reported a value greater than the reporting level for the analyte Chlorobenzene.				

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34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**Environmental**

# CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/  
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 1  
Courier:                       
Tracking #:                     



\* 2 2 5 4 8 9 3 \*

Co. Name: <b>ERM</b>		Phone: <b>(304) 757-4777</b>	
Contact (Report to): <b>DAVID CONNELLY</b>			
Address: <b>204 CHASE DRIVE, HUNTER CREEK, WV, 25526</b>			
Bill to (if different than Report to):		PO#:	
Project Name/ID:		ALS Quote #:	
TAT: <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.		Date Required: Approved By:	
Email? <input checked="" type="checkbox"/> Fax? <input type="checkbox"/>		DAVID CONNELLY@ERM.COM	
Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time
1 Residential Well		8/15/17	1410
2 Packings Shed Well		8/15/17	1445
3 Dup-1		8/15/17	0700
4 TB-1		8/15/17	1413
5 ER-1		8/16/17	1650
6			
7			
8			
SAMPLED BY (Please Print): <b>Ryan Baizer</b>		Project Comments:	
Relinquished By / Company Name	Date	Time	Received By / Company Name
1 <b>Ryan Baizer</b>	8/17/17	0817	2 <b>AIS Baizer</b>
3 <b>Chase</b>	8-17	1644	4 <b>Chase</b>
5			6
7			8
9			10
Enter Number of Containers Per Analysis		Enter Criteria Required?	
VOCs - 82608 Pesticides - 8081 T. Arsenic + T. Lead		BOD Criteria Required? <input type="checkbox"/> Enter BOD Criteria: <u>                    </u>	
Container in good condition? <input checked="" type="checkbox"/> COC Labels complete/accurate? <input checked="" type="checkbox"/> Received on ice? <input checked="" type="checkbox"/> (If present) Seals intact? <input checked="" type="checkbox"/> Custody seals Present? <input checked="" type="checkbox"/> Correct containers? <input checked="" type="checkbox"/> Correct sample volume? <input checked="" type="checkbox"/> Correct preservation? <input checked="" type="checkbox"/> Headspace/Volatiles? <input checked="" type="checkbox"/> Circle appropriate Y or N.		ALS FIELD SERVICES Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment <input type="checkbox"/> Other: <input type="checkbox"/>	
ANALYSES/METHOD REQUESTED G/LA G/LC IL 40mL N/A HCL		SOWA Format? <input type="checkbox"/> Standard <input type="checkbox"/> CLP-like <input type="checkbox"/> NJ-Reduced <input type="checkbox"/> NJ-Fill <input type="checkbox"/> State Sampling Collected in? <input type="checkbox"/> MD <input type="checkbox"/> NJ <input type="checkbox"/> NY <input type="checkbox"/> PA <input type="checkbox"/> If yes, format type: <u>                    </u>	



29-Sep-2017

David Connelly  
ERM, Inc  
204 Chase Drive  
Hurricane, WV 25526

Re: **Roxul Phase II**

Work Order: **1709903**

Dear David,

ALS Environmental received 59 samples on 15-Sep-2017 03:29 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 71.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Kiser".

Electronically approved by: Rebecca Kiser

Rebecca Kiser  
Project Manager

Certificate No: WV: 355

### Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Work Order:** 1709903

## Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1709903-01	SB-28S (0'-0.5') Grab	Soil		9/13/2017 17:05	9/16/2017 09:45	<input type="checkbox"/>
1709903-02	SB-28S (0.5'-1.0') Grab	Soil		9/13/2017 17:08	9/16/2017 09:45	<input type="checkbox"/>
1709903-03	SB-28S2 (0'-0.5') Grab	Soil		9/13/2017 17:15	9/16/2017 09:45	<input type="checkbox"/>
1709903-04	SB-28S2 (0.5'-1.0') Grab	Soil		9/13/2017 17:18	9/16/2017 09:45	<input type="checkbox"/>
1709903-05	SB-28E (0'-0.5') Grab	Soil		9/13/2017 17:28	9/16/2017 09:45	<input type="checkbox"/>
1709903-06	SB-28E (0.5'-1.0') Grab	Soil		9/13/2017 17:31	9/16/2017 09:45	<input type="checkbox"/>
1709903-07	SB-28E2 (0'-0.5') Grab	Soil		9/13/2017 17:37	9/16/2017 09:45	<input type="checkbox"/>
1709903-08	SB-28E2 (0.5'-1.0') Grab	Soil		9/13/2017 17:40	9/16/2017 09:45	<input type="checkbox"/>
1709903-09	SB-28W (0'-0.5') Grab	Soil		9/13/2017 17:45	9/16/2017 09:45	<input type="checkbox"/>
1709903-10	SB-28W (0.5'-1.0') Grab	Soil		9/13/2017 17:48	9/16/2017 09:45	<input type="checkbox"/>
1709903-11	SB-28W2 (0'-0.5') Grab	Soil		9/13/2017 17:51	9/16/2017 09:45	<input type="checkbox"/>
1709903-12	SB-28W2 (0.5'-1.0') Grab	Soil		9/13/2017 17:54	9/16/2017 09:45	<input type="checkbox"/>
1709903-13	SB-28N (0'-0.5') Grab	Soil		9/13/2017 18:01	9/16/2017 09:45	<input type="checkbox"/>
1709903-14	SB-28N (0.5'-1.0') Grab	Soil		9/13/2017 18:04	9/16/2017 09:45	<input type="checkbox"/>
1709903-15	SB-28N2 (0'-0.5') Grab	Soil		9/13/2017 18:08	9/16/2017 09:45	<input type="checkbox"/>
1709903-16	SB-28N2 (0.5'-1.0') Grab	Soil		9/13/2017 18:11	9/16/2017 09:45	<input type="checkbox"/>
1709903-17	SB-31 (2.5'-3.0') Grab	Soil		9/14/2017 08:35	9/16/2017 09:45	<input type="checkbox"/>
1709903-18	SB-31 (3.5'-4.0') Grab	Soil		9/14/2017 08:40	9/16/2017 09:45	<input type="checkbox"/>
1709903-19	SB-31 (4.5'-5.0') Grab	Soil		9/14/2017 08:45	9/16/2017 09:45	<input type="checkbox"/>
1709903-20	MA-DP-6 (0'-0.5') Grab	Soil		9/14/2017 09:12	9/16/2017 09:45	<input type="checkbox"/>
1709903-21	MA-DP-6 (0.5'-1.0') Grab	Soil		9/14/2017 09:15	9/16/2017 09:45	<input type="checkbox"/>
1709903-22	MA-DP-5 (0'-0.5') Grab	Soil		9/14/2017 09:28	9/16/2017 09:45	<input type="checkbox"/>
1709903-23	MA-DP-5 (0.5'-1.0') Grab	Soil		9/14/2017 09:31	9/16/2017 09:45	<input type="checkbox"/>
1709903-24	MA-DP-5 (1.0'-1.5') Grab	Soil		9/14/2017 09:34	9/16/2017 09:45	<input type="checkbox"/>
1709903-25	MA-DP-5 (2'-2.5') Grab	Soil		9/14/2017 09:37	9/16/2017 09:45	<input type="checkbox"/>
1709903-26	MA-DP-12 (0'-0.5') Grab	Soil		9/14/2017 09:55	9/16/2017 09:45	<input type="checkbox"/>
1709903-27	MA-DP-12 (0.5'-1.0') Grab	Soil		9/14/2017 09:58	9/16/2017 09:45	<input type="checkbox"/>
1709903-28	MA-DP-4 (0'-0.5') Grab	Soil		9/14/2017 10:05	9/16/2017 09:45	<input type="checkbox"/>
1709903-29	MA-DP-4 (0.5'-1.0') Grab	Soil		9/14/2017 10:08	9/16/2017 09:45	<input type="checkbox"/>
1709903-30	MA-DP-4 (1.0'-1.5') Grab	Soil		9/14/2017 10:11	9/16/2017 09:45	<input type="checkbox"/>
1709903-31	MA-DP-4 (2.0'-2.5') Grab	Soil		9/14/2017 10:14	9/16/2017 09:45	<input type="checkbox"/>
1709903-32	MA-DP-11 (0'-0.5') Grab	Soil		9/14/2017 10:30	9/16/2017 09:45	<input type="checkbox"/>
1709903-33	MA-DP-11 (0.5'-1.0') Grab	Soil		9/14/2017 10:33	9/16/2017 09:45	<input type="checkbox"/>
1709903-34	MA-DP-11 (1.0'-1.5') Grab	Soil		9/14/2017 10:36	9/16/2017 09:45	<input type="checkbox"/>
1709903-35	MA-DP-11 (1.5'-2.0') Grab	Soil		9/14/2017 10:39	9/16/2017 09:45	<input type="checkbox"/>
1709903-36	MA-DP-10 (0'-0.5') Grab	Soil		9/14/2017 10:55	9/16/2017 09:45	<input type="checkbox"/>
1709903-37	MA-DP-10 (0.5'-1.0') Grab	Soil		9/14/2017 10:58	9/16/2017 09:45	<input type="checkbox"/>
1709903-38	MA-DP-10 (1.0'-1.5') Grab	Soil		9/14/2017 11:01	9/16/2017 09:45	<input type="checkbox"/>
1709903-39	MA-DP-10 (1.5'-2.0') Grab	Soil		9/14/2017 11:04	9/16/2017 09:45	<input type="checkbox"/>

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**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Work Order:** 1709903

## Work Order Sample Summary

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1709903-40	MA-DP-3 (0'-0.5') Grab	Soil		9/14/2017 11:22	9/16/2017 09:45	<input type="checkbox"/>
1709903-41	MA-DP-3 (0.5'-1.0') Grab	Soil		9/14/2017 11:25	9/16/2017 09:45	<input type="checkbox"/>
1709903-42	MA-DP-3 (1.0'-1.5') Grab	Soil		9/14/2017 11:28	9/16/2017 09:45	<input type="checkbox"/>
1709903-43	MA-DP-3 (2.0'-2.5') Grab	Soil		9/14/2017 11:31	9/16/2017 09:45	<input type="checkbox"/>
1709903-44	MA-DP-9 (0'-0.5') Grab	Soil		9/14/2017 11:45	9/16/2017 09:45	<input type="checkbox"/>
1709903-45	MA-DP-9 (0.5'-1.0') Grab	Soil		9/14/2017 11:48	9/16/2017 09:45	<input type="checkbox"/>
1709903-46	MA-DP-9 (1.0'-1.5') Grab	Soil		9/14/2017 11:51	9/16/2017 09:45	<input type="checkbox"/>
1709903-47	MA-DP-9 (1.5'-2.0') Grab	Soil		9/14/2017 11:54	9/16/2017 09:45	<input type="checkbox"/>
1709903-48	MA-DP-2 (0'-0.5') Grab	Soil		9/14/2017 12:20	9/16/2017 09:45	<input type="checkbox"/>
1709903-49	MA-DP-2 (0.5'-1.0') Grab	Soil		9/14/2017 12:23	9/16/2017 09:45	<input type="checkbox"/>
1709903-50	MA-DP-2 (1.0'-1.5') Grab	Soil		9/14/2017 12:26	9/16/2017 09:45	<input type="checkbox"/>
1709903-51	MA-DP-2 (2.0'-2.5') Grab	Soil		9/14/2017 12:28	9/16/2017 09:45	<input type="checkbox"/>
1709903-52	MA-DP-8 (0'-0.5') Grab	Soil		9/14/2017 12:38	9/16/2017 09:45	<input type="checkbox"/>
1709903-53	MA-DP-8 (0.5'-1.0') Grab	Soil		9/14/2017 12:41	9/16/2017 09:45	<input type="checkbox"/>
1709903-54	MA-DP-8 (1.0'-1.5') Grab	Soil		9/14/2017 12:44	9/16/2017 09:45	<input type="checkbox"/>
1709903-55	MA-DP-8 (1.5'-2.0') Grab	Soil		9/14/2017 12:47	9/16/2017 09:45	<input type="checkbox"/>
1709903-56	MA-DP-1 (0'-0.5') Grab	Soil		9/14/2017 13:00	9/16/2017 09:45	<input type="checkbox"/>
1709903-57	MA-DP-1 (0.5'-1.0') Grab	Soil		9/14/2017 13:03	9/16/2017 09:45	<input type="checkbox"/>
1709903-58	MA-DP-1 (1.0'-1.5') Grab	Soil		9/14/2017 13:06	9/16/2017 09:45	<input type="checkbox"/>
1709903-59	MA-DP-1 (2.0'-2.5') Grab	Soil		9/14/2017 13:09	9/16/2017 09:45	<input type="checkbox"/>

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**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Work Order:** 1709903

**Case Narrative****QC Comments:**

Batch 107637, Method PESTLVI\_8081\_S, Sample 1709903-32A MS: The MS recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: Reference Quals Sheet

Batch 107637, Method PESTLVI\_8081\_S, Sample 1709903-32A MSD: The RPD between the MS and MSD was outside the control limit. The corresponding result in the parent sample should be considered estimated for this analyte: Reference Quals Sheet

Batch 107721, Method PESTLVI\_8081\_S, Sample 1709903-56A MS: The MS and/or MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: 4,4'-DDE; 4,4'-DDT

Batch 107824, Method PESTLVI\_8081\_S, Sample 1709903-21A: The reporting limit is elevated due to dilution needed to eliminate matrix-related interference for the analytes. All Pesticides.

Batch 107824, Method PESTLVI\_8081\_S, Sample 1709903-21A MS: The MS and/or MSD recovery was above the upper control limit. The corresponding result in the parent sample was non-detect, therefore no qualification is necessary: Heptachlor Epoxide

Batch 107824, Method PESTLVI\_8081\_S, Sample 1709903-21A MS: The matrix spike recovery was outside of the control limit. However, the matrix spike duplicate recovery and the RPD between the MS and MSD were in control. No qualification is required for this analyte: gamma-Chlordane

Batch 107824, Method PESTLVI\_8081\_S, Sample 1709903-21A MS: The MS and/or MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; Dieldrin; Endrin Ketone

Batch 107824, Method PESTLVI\_8081\_S, Sample 1709903-21A MS: The MS and MSD recoveries are unavailable due to dilution below the calibration range. delta-BHC

Batch 107824, Method PESTLVI\_8081\_S, Sample 1709903-21A MSD: The RPD between the MS and MSD was outside the control limit. The corresponding result in the parent sample

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**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Work Order:** 1709903

**Case Narrative**

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should be considered estimated for this analyte: Endrin.



**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**WorkOrder:** 1709903

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

## ALS Group, USA

Date: 29-Sep-17

Client: ERM, Inc

Project: Roxul Phase II

Sample ID: SB-28S (0'-0.5') Grab

Collection Date: 9/13/2017 05:05 PM

Work Order: 1709903

Lab ID: 1709903-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/18/17		Analyst: JF
Lead	18		0.0084	0.52	mg/Kg-dry	1	9/18/2017 17:54
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	21		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group, USA

Date: 29-Sep-17

Client: ERM, Inc

Project: Roxul Phase II

Sample ID: SB-28S (0.5'-1.0') Grab

Collection Date: 9/13/2017 05:08 PM

Work Order: 1709903

Lab ID: 1709903-02

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/18/17		Analyst: JF
Lead	20		0.0078	0.49	mg/Kg-dry	1	9/18/2017 17:56
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	25		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group, USA

Date: 29-Sep-17

Client: ERM, Inc

Project: Roxul Phase II

Sample ID: SB-28E (0-0.5') Grab

Collection Date: 9/13/2017 05:28 PM

Work Order: 1709903

Lab ID: 1709903-05

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: JF
Lead	25		0.0072	0.45	mg/Kg-dry	1	9/21/2017 18:13
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	22		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-28E (0.5'-1.0') Grab  
**Collection Date:** 9/13/2017 05:31 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-06  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: JF
Lead	20		0.0067	0.42	mg/Kg-dry	1	9/21/2017 18:15
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	19		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-28W (0'-0.5') Grab  
**Collection Date:** 9/13/2017 05:45 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-09  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: JF
Lead	20		0.0064	0.40	mg/Kg-dry	1	9/21/2017 18:16
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	18		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



## ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-28W (0.5'-1.0') Grab  
**Collection Date:** 9/13/2017 05:48 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-10  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: JF
Lead	20		0.0067	0.42	mg/Kg-dry	1	9/21/2017 18:18
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	19		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group, USA****Date:** 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-28N (0-0.5') Grab  
**Collection Date:** 9/13/2017 06:01 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-13  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: JF
Lead	23		0.0070	0.44	mg/Kg-dry	1	9/21/2017 18:20
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	20		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group, USA

Date: 29-Sep-17

Client: ERM, Inc

Project: Roxul Phase II

Sample ID: SB-28N (0.5'-1.0') Grab

Collection Date: 9/13/2017 06:04 PM

Work Order: 1709903

Lab ID: 1709903-14

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
<b>METALS BY ICP-MS</b>			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: JF
Lead	23		0.0071	0.44	mg/Kg-dry	1	9/21/2017 18:21
<b>MOISTURE</b>			Method:SW3550C				Analyst: NW
Moisture	19		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-31 (2.5'-3.0') Grab  
**Collection Date:** 9/14/2017 08:35 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-17  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/22/17		Analyst: <b>EB</b>
4,4'-DDD	39		2.8	13	µg/Kg-dry	1	9/25/2017 21:15
4,4'-DDE	50		2.5	13	µg/Kg-dry	1	9/25/2017 21:15
4,4'-DDT	1,400		100	640	µg/Kg-dry	50	9/27/2017 16:25
Aldrin	U		2.6	13	µg/Kg-dry	1	9/25/2017 21:15
alpha-BHC	U		2.5	13	µg/Kg-dry	1	9/25/2017 21:15
alpha-Chlordane	U		2.4	13	µg/Kg-dry	1	9/25/2017 21:15
beta-BHC	4.1	J	2.4	13	µg/Kg-dry	1	9/25/2017 21:15
Chlordane, Technical	U		13	32	µg/Kg-dry	1	9/25/2017 21:15
delta-BHC	U		6.7	13	µg/Kg-dry	1	9/25/2017 21:15
Dieldrin	74		2.5	13	µg/Kg-dry	1	9/25/2017 21:15
Endosulfan I	U		2.1	13	µg/Kg-dry	1	9/25/2017 21:15
Endosulfan II	U		2.4	13	µg/Kg-dry	1	9/25/2017 21:15
Endosulfan sulfate	U		2.7	13	µg/Kg-dry	1	9/25/2017 21:15
Endrin	3.2	J	2.6	13	µg/Kg-dry	1	9/25/2017 21:15
Endrin aldehyde	U		2.2	13	µg/Kg-dry	1	9/25/2017 21:15
Endrin ketone	U		2.4	13	µg/Kg-dry	1	9/25/2017 21:15
gamma-BHC (Lindane)	U		3.1	13	µg/Kg-dry	1	9/25/2017 21:15
gamma-Chlordane	U		2.9	13	µg/Kg-dry	1	9/25/2017 21:15
Heptachlor	U		3.6	13	µg/Kg-dry	1	9/25/2017 21:15
Heptachlor epoxide	U		2.3	13	µg/Kg-dry	1	9/25/2017 21:15
Methoxychlor	U		2.2	13	µg/Kg-dry	1	9/25/2017 21:15
Toxaphene	U		14	77	µg/Kg-dry	1	9/25/2017 21:15
Surr: Decachlorobiphenyl	75.0			50-150	%REC	1	9/25/2017 21:15
Surr: Tetrachloro-m-xylene	81.8			50-150	%REC	1	9/25/2017 21:15
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	23		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-31 (3.5'-4.0') Grab  
**Collection Date:** 9/14/2017 08:40 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-18  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/22/17		Analyst: <b>EB</b>
4,4'-DDD	26		2.7	12	µg/Kg-dry	1	9/25/2017 21:55
4,4'-DDE	32		2.4	12	µg/Kg-dry	1	9/25/2017 21:55
4,4'-DDT	800		39	250	µg/Kg-dry	20	9/27/2017 16:39
Aldrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 21:55
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/25/2017 21:55
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/25/2017 21:55
beta-BHC	3.1	J	2.3	12	µg/Kg-dry	1	9/25/2017 21:55
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/25/2017 21:55
delta-BHC	U		6.4	12	µg/Kg-dry	1	9/25/2017 21:55
Dieldrin	35		2.3	12	µg/Kg-dry	1	9/25/2017 21:55
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/25/2017 21:55
Endosulfan II	U		2.3	12	µg/Kg-dry	1	9/25/2017 21:55
Endosulfan sulfate	U		2.5	12	µg/Kg-dry	1	9/25/2017 21:55
Endrin	U		2.5	12	µg/Kg-dry	1	9/25/2017 21:55
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/25/2017 21:55
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/25/2017 21:55
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/25/2017 21:55
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/25/2017 21:55
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/25/2017 21:55
Heptachlor epoxide	U		2.2	12	µg/Kg-dry	1	9/25/2017 21:55
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/25/2017 21:55
Toxaphene	U		13	74	µg/Kg-dry	1	9/25/2017 21:55
Surr: Decachlorobiphenyl	58.7			50-150	%REC	1	9/25/2017 21:55
Surr: Tetrachloro-m-xylene	66.1			50-150	%REC	1	9/25/2017 21:55
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	21		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** SB-31 (4.5'-5.0') Grab  
**Collection Date:** 9/14/2017 08:45 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-19  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/22/17		Analyst: <b>EB</b>
4,4'-DDD	26		2.7	12	µg/Kg-dry	1	9/25/2017 22:08
4,4'-DDE	43		2.4	12	µg/Kg-dry	1	9/25/2017 22:08
4,4'-DDT	920		98	620	µg/Kg-dry	50	9/27/2017 16:54
Aldrin	U		2.5	12	µg/Kg-dry	1	9/25/2017 22:08
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/25/2017 22:08
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/25/2017 22:08
beta-BHC	3.4	J	2.3	12	µg/Kg-dry	1	9/25/2017 22:08
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/25/2017 22:08
delta-BHC	U		6.4	12	µg/Kg-dry	1	9/25/2017 22:08
Dieldrin	32		2.4	12	µg/Kg-dry	1	9/25/2017 22:08
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/25/2017 22:08
Endosulfan II	U		2.3	12	µg/Kg-dry	1	9/25/2017 22:08
Endosulfan sulfate	U		2.6	12	µg/Kg-dry	1	9/25/2017 22:08
Endrin	U		2.5	12	µg/Kg-dry	1	9/25/2017 22:08
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/25/2017 22:08
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/25/2017 22:08
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/25/2017 22:08
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/25/2017 22:08
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/25/2017 22:08
Heptachlor epoxide	U		2.3	12	µg/Kg-dry	1	9/25/2017 22:08
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/25/2017 22:08
Toxaphene	U		13	74	µg/Kg-dry	1	9/25/2017 22:08
Surr: Decachlorobiphenyl	71.7			50-150	%REC	1	9/25/2017 22:08
Surr: Tetrachloro-m-xylene	76.5			50-150	%REC	1	9/25/2017 22:08
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	20		0.025	0.050	% of sample	1	9/21/2017 21:50

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-6 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 09:12 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-20  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/22/17		Analyst: <b>EB</b>	
4,4'-DDD	230		26	120	µg/Kg-dry	10	9/27/2017 17:08
4,4'-DDE	3,400		120	600	µg/Kg-dry	50	9/27/2017 17:22
4,4'-DDT	2,200		96	600	µg/Kg-dry	50	9/27/2017 17:22
Aldrin	3.7	J	2.4	12	µg/Kg-dry	1	9/25/2017 22:21
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 22:21
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/25/2017 22:21
beta-BHC	3.3	J	2.2	12	µg/Kg-dry	1	9/25/2017 22:21
Chlordane, Technical	U		12	30	µg/Kg-dry	1	9/25/2017 22:21
delta-BHC	U		6.3	12	µg/Kg-dry	1	9/25/2017 22:21
Dieldrin	740		23	120	µg/Kg-dry	10	9/27/2017 17:08
Endosulfan I	23		1.9	12	µg/Kg-dry	1	9/25/2017 22:21
Endosulfan II	24		2.3	12	µg/Kg-dry	1	9/25/2017 22:21
Endosulfan sulfate	U		2.5	12	µg/Kg-dry	1	9/25/2017 22:21
Endrin	50		2.5	12	µg/Kg-dry	1	9/25/2017 22:21
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/25/2017 22:21
Endrin ketone	68		2.3	12	µg/Kg-dry	1	9/25/2017 22:21
gamma-BHC (Lindane)	U		2.9	12	µg/Kg-dry	1	9/25/2017 22:21
gamma-Chlordane	U		2.7	12	µg/Kg-dry	1	9/25/2017 22:21
Heptachlor	U		3.4	12	µg/Kg-dry	1	9/25/2017 22:21
Heptachlor epoxide	U		2.2	12	µg/Kg-dry	1	9/25/2017 22:21
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/25/2017 22:21
Toxaphene	U		13	72	µg/Kg-dry	1	9/25/2017 22:21
Surr: Decachlorobiphenyl	71.6			50-150	%REC	1	9/25/2017 22:21
Surr: Tetrachloro-m-xylene	78.9			50-150	%REC	1	9/25/2017 22:21
<b>MOISTURE</b>							
	Method:SW3550C			Analyst: <b>NW</b>			
Moisture	19		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-6 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 09:15 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-21  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/22/17		Analyst: <b>EB</b>	
4,4'-DDD	610		27	120	µg/Kg-dry	10	9/27/2017 16:11
4,4'-DDE	3,100		230	1,200	µg/Kg-dry	100	9/27/2017 21:11
4,4'-DDT	1,900		190	1,200	µg/Kg-dry	100	9/27/2017 21:11
Aldrin	U		12	61	µg/Kg-dry	5	9/25/2017 19:56
alpha-BHC	U		12	61	µg/Kg-dry	5	9/25/2017 19:56
alpha-Chlordane	U		12	61	µg/Kg-dry	5	9/25/2017 19:56
beta-BHC	19	J	11	61	µg/Kg-dry	5	9/25/2017 19:56
Chlordane, Technical	U		60	150	µg/Kg-dry	5	9/25/2017 19:56
delta-BHC	U		31	61	µg/Kg-dry	5	9/25/2017 19:56
Dieldrin	860		23	120	µg/Kg-dry	10	9/27/2017 16:11
Endosulfan I	U		9.8	61	µg/Kg-dry	5	9/25/2017 19:56
Endosulfan II	U		12	61	µg/Kg-dry	5	9/25/2017 19:56
Endosulfan sulfate	U		13	61	µg/Kg-dry	5	9/25/2017 19:56
Endrin	130		12	61	µg/Kg-dry	5	9/25/2017 19:56
Endrin aldehyde	U		10	61	µg/Kg-dry	5	9/25/2017 19:56
Endrin ketone	150		11	61	µg/Kg-dry	5	9/25/2017 19:56
gamma-BHC (Lindane)	U		15	61	µg/Kg-dry	5	9/25/2017 19:56
gamma-Chlordane	U		14	61	µg/Kg-dry	5	9/25/2017 19:56
Heptachlor	U		17	61	µg/Kg-dry	5	9/25/2017 19:56
Heptachlor epoxide	U		11	61	µg/Kg-dry	5	9/25/2017 19:56
Methoxychlor	U		10	61	µg/Kg-dry	5	9/25/2017 19:56
Toxaphene	U		65	360	µg/Kg-dry	5	9/25/2017 19:56
Surr: Decachlorobiphenyl	85.4			50-150	%REC	5	9/25/2017 19:56
Surr: Tetrachloro-m-xylene	70.8			50-150	%REC	5	9/25/2017 19:56
<b>MOISTURE</b>							
	Method:SW3550C					Analyst: <b>NW</b>	
Moisture	20		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-5 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 09:28 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-22  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>	
4,4'-DDD	480		26	120	µg/Kg-dry	10	9/27/2017 13:20
4,4'-DDE	2,600		230	1,200	µg/Kg-dry	100	9/27/2017 13:34
4,4'-DDT	8,200		190	1,200	µg/Kg-dry	100	9/27/2017 13:34
Aldrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 13:28
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 13:28
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/25/2017 13:28
beta-BHC	U		2.2	12	µg/Kg-dry	1	9/25/2017 13:28
Chlordane, Technical	U		12	30	µg/Kg-dry	1	9/25/2017 13:28
delta-BHC	U		6.2	12	µg/Kg-dry	1	9/25/2017 13:28
Dieldrin	110	J	23	120	µg/Kg-dry	10	9/27/2017 13:20
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/25/2017 13:28
Endosulfan II	U		2.3	12	µg/Kg-dry	1	9/25/2017 13:28
Endosulfan sulfate	U		2.5	12	µg/Kg-dry	1	9/25/2017 13:28
Endrin	37		2.4	12	µg/Kg-dry	1	9/25/2017 13:28
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/25/2017 13:28
Endrin ketone	6.2	J	2.2	12	µg/Kg-dry	1	9/25/2017 13:28
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/25/2017 13:28
gamma-Chlordane	U		2.7	12	µg/Kg-dry	1	9/25/2017 13:28
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/25/2017 13:28
Heptachlor epoxide	U		2.2	12	µg/Kg-dry	1	9/25/2017 13:28
Methoxychlor	5.3	J	2.0	12	µg/Kg-dry	1	9/25/2017 13:28
Toxaphene	U		13	71	µg/Kg-dry	1	9/25/2017 13:28
Surr: Decachlorobiphenyl	50.6			50-150	%REC	1	9/25/2017 13:28
Surr: Tetrachloro-m-xylene	53.7			50-150	%REC	1	9/25/2017 13:28
<b>MOISTURE</b>							
	Method:SW3550C					Analyst: <b>NW</b>	
Moisture	17		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-5 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 09:31 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-23  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>	
4,4'-DDD	1,400		260	1,200	µg/Kg-dry	100	9/27/2017 14:03
4,4'-DDE	6,200		230	1,200	µg/Kg-dry	100	9/27/2017 14:03
4,4'-DDT	3,700		190	1,200	µg/Kg-dry	100	9/27/2017 14:03
Aldrin	U		2.3	12	µg/Kg-dry	1	9/25/2017 13:42
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 13:42
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/25/2017 13:42
beta-BHC	3.4	J	2.2	12	µg/Kg-dry	1	9/25/2017 13:42
Chlordane, Technical	U		12	29	µg/Kg-dry	1	9/25/2017 13:42
delta-BHC	U		6.1	12	µg/Kg-dry	1	9/25/2017 13:42
Dieldrin	160		22	120	µg/Kg-dry	10	9/27/2017 13:48
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/25/2017 13:42
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/25/2017 13:42
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/25/2017 13:42
Endrin	41		2.4	12	µg/Kg-dry	1	9/25/2017 13:42
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/25/2017 13:42
Endrin ketone	11	J	2.2	12	µg/Kg-dry	1	9/25/2017 13:42
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/25/2017 13:42
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/25/2017 13:42
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/25/2017 13:42
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/25/2017 13:42
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/25/2017 13:42
Toxaphene	U		13	70	µg/Kg-dry	1	9/25/2017 13:42
Surr: Decachlorobiphenyl	62.4			50-150	%REC	1	9/25/2017 13:42
Surr: Tetrachloro-m-xylene	68.5			50-150	%REC	1	9/25/2017 13:42
<b>MOISTURE</b>							
	Method:SW3550C					Analyst: <b>NW</b>	
Moisture	16		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-5 (1.0'-1.5') Grab  
**Collection Date:** 9/14/2017 09:34 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-24  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>
4,4'-DDD	40		2.6	12	µg/Kg-dry	1	9/26/2017 21:01
4,4'-DDE	740		45	230	µg/Kg-dry	20	9/27/2017 15:28
4,4'-DDT	78		1.9	12	µg/Kg-dry	1	9/26/2017 21:01
Aldrin	U		2.3	12	µg/Kg-dry	1	9/26/2017 21:01
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/26/2017 21:01
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/26/2017 21:01
beta-BHC	U		2.2	12	µg/Kg-dry	1	9/26/2017 21:01
Chlordane, Technical	U		12	29	µg/Kg-dry	1	9/26/2017 21:01
delta-BHC	U		6.1	12	µg/Kg-dry	1	9/26/2017 21:01
Dieldrin	10	J	2.2	12	µg/Kg-dry	1	9/26/2017 21:01
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/26/2017 21:01
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/26/2017 21:01
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/26/2017 21:01
Endrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 21:01
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/26/2017 21:01
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/26/2017 21:01
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/26/2017 21:01
gamma-Chlordane	U		2.7	12	µg/Kg-dry	1	9/26/2017 21:01
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/26/2017 21:01
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/26/2017 21:01
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/26/2017 21:01
Toxaphene	U		13	70	µg/Kg-dry	1	9/26/2017 21:01
Surr: Decachlorobiphenyl	82.4			50-150	%REC	1	9/26/2017 21:01
Surr: Tetrachloro-m-xylene	94.6			50-150	%REC	1	9/26/2017 21:01
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	15		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-5 (2'-2.5') Grab  
**Collection Date:** 9/14/2017 09:37 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-25  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>	
4,4'-DDD	7.6	J	2.9	13	µg/Kg-dry	1	9/26/2017 20:47
4,4'-DDE	57		2.5	13	µg/Kg-dry	1	9/26/2017 20:47
4,4'-DDT	53		2.1	13	µg/Kg-dry	1	9/26/2017 20:47
Aldrin	U		2.6	13	µg/Kg-dry	1	9/26/2017 20:47
alpha-BHC	U		2.6	13	µg/Kg-dry	1	9/26/2017 20:47
alpha-Chlordane	U		2.5	13	µg/Kg-dry	1	9/26/2017 20:47
beta-BHC	U		2.4	13	µg/Kg-dry	1	9/26/2017 20:47
Chlordane, Technical	U		13	33	µg/Kg-dry	1	9/26/2017 20:47
delta-BHC	U		6.8	13	µg/Kg-dry	1	9/26/2017 20:47
Dieldrin	4.4	J	2.5	13	µg/Kg-dry	1	9/26/2017 20:47
Endosulfan I	U		2.1	13	µg/Kg-dry	1	9/26/2017 20:47
Endosulfan II	U		2.5	13	µg/Kg-dry	1	9/26/2017 20:47
Endosulfan sulfate	U		2.7	13	µg/Kg-dry	1	9/26/2017 20:47
Endrin	3.5	J	2.7	13	µg/Kg-dry	1	9/26/2017 20:47
Endrin aldehyde	U		2.3	13	µg/Kg-dry	1	9/26/2017 20:47
Endrin ketone	U		2.5	13	µg/Kg-dry	1	9/26/2017 20:47
gamma-BHC (Lindane)	U		3.1	13	µg/Kg-dry	1	9/26/2017 20:47
gamma-Chlordane	U		3.0	13	µg/Kg-dry	1	9/26/2017 20:47
Heptachlor	U		3.7	13	µg/Kg-dry	1	9/26/2017 20:47
Heptachlor epoxide	U		2.4	13	µg/Kg-dry	1	9/26/2017 20:47
Methoxychlor	U		2.3	13	µg/Kg-dry	1	9/26/2017 20:47
Toxaphene	U		14	79	µg/Kg-dry	1	9/26/2017 20:47
Surr: Decachlorobiphenyl	79.1			50-150	%REC	1	9/26/2017 20:47
Surr: Tetrachloro-m-xylene	95.2			50-150	%REC	1	9/26/2017 20:47
<b>MOISTURE</b>							
	Method:SW3550C			Analyst: <b>NW</b>			
Moisture	27		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-12 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 09:55 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-26  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>
4,4'-DDD	45		2.4	11	µg/Kg-dry	1	9/25/2017 13:55
4,4'-DDE	1,000		110	550	µg/Kg-dry	50	9/27/2017 14:31
4,4'-DDT	240		18	110	µg/Kg-dry	10	9/27/2017 14:17
Aldrin	U		2.2	11	µg/Kg-dry	1	9/25/2017 13:55
alpha-BHC	U		2.2	11	µg/Kg-dry	1	9/25/2017 13:55
alpha-Chlordane	U		2.1	11	µg/Kg-dry	1	9/25/2017 13:55
beta-BHC	U		2.0	11	µg/Kg-dry	1	9/25/2017 13:55
Chlordane, Technical	U		11	28	µg/Kg-dry	1	9/25/2017 13:55
delta-BHC	U		5.7	11	µg/Kg-dry	1	9/25/2017 13:55
Dieldrin	59		2.1	11	µg/Kg-dry	1	9/25/2017 13:55
Endosulfan I	15		1.8	11	µg/Kg-dry	1	9/25/2017 13:55
Endosulfan II	5.8	J	2.1	11	µg/Kg-dry	1	9/25/2017 13:55
Endosulfan sulfate	U		2.3	11	µg/Kg-dry	1	9/25/2017 13:55
Endrin	38		2.3	11	µg/Kg-dry	1	9/25/2017 13:55
Endrin aldehyde	U		1.9	11	µg/Kg-dry	1	9/25/2017 13:55
Endrin ketone	6.5	J	2.1	11	µg/Kg-dry	1	9/25/2017 13:55
gamma-BHC (Lindane)	U		2.6	11	µg/Kg-dry	1	9/25/2017 13:55
gamma-Chlordane	U		2.5	11	µg/Kg-dry	1	9/25/2017 13:55
Heptachlor	U		3.1	11	µg/Kg-dry	1	9/25/2017 13:55
Heptachlor epoxide	U		2.0	11	µg/Kg-dry	1	9/25/2017 13:55
Methoxychlor	U		1.9	11	µg/Kg-dry	1	9/25/2017 13:55
Toxaphene	U		12	66	µg/Kg-dry	1	9/25/2017 13:55
Surr: Decachlorobiphenyl	72.2			50-150	%REC	1	9/25/2017 13:55
Surr: Tetrachloro-m-xylene	78.6			50-150	%REC	1	9/25/2017 13:55
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	11		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-12 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 09:58 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-27  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>
4,4'-DDD	28		2.4	11	µg/Kg-dry	1	9/25/2017 14:08
4,4'-DDE	490		21	110	µg/Kg-dry	10	9/27/2017 14:45
4,4'-DDT	35		1.7	11	µg/Kg-dry	1	9/25/2017 14:08
Aldrin	U		2.2	11	µg/Kg-dry	1	9/25/2017 14:08
alpha-BHC	U		2.1	11	µg/Kg-dry	1	9/25/2017 14:08
alpha-Chlordane	U		2.1	11	µg/Kg-dry	1	9/25/2017 14:08
beta-BHC	U		2.0	11	µg/Kg-dry	1	9/25/2017 14:08
Chlordane, Technical	U		11	27	µg/Kg-dry	1	9/25/2017 14:08
delta-BHC	U		5.7	11	µg/Kg-dry	1	9/25/2017 14:08
Dieldrin	18		2.1	11	µg/Kg-dry	1	9/25/2017 14:08
Endosulfan I	2.0	J	1.8	11	µg/Kg-dry	1	9/25/2017 14:08
Endosulfan II	U		2.1	11	µg/Kg-dry	1	9/25/2017 14:08
Endosulfan sulfate	U		2.3	11	µg/Kg-dry	1	9/25/2017 14:08
Endrin	11	J	2.3	11	µg/Kg-dry	1	9/25/2017 14:08
Endrin aldehyde	U		1.9	11	µg/Kg-dry	1	9/25/2017 14:08
Endrin ketone	2.3	J	2.1	11	µg/Kg-dry	1	9/25/2017 14:08
gamma-BHC (Lindane)	U		2.6	11	µg/Kg-dry	1	9/25/2017 14:08
gamma-Chlordane	U		2.5	11	µg/Kg-dry	1	9/25/2017 14:08
Heptachlor	U		3.1	11	µg/Kg-dry	1	9/25/2017 14:08
Heptachlor epoxide	U		2.0	11	µg/Kg-dry	1	9/25/2017 14:08
Methoxychlor	U		1.9	11	µg/Kg-dry	1	9/25/2017 14:08
Toxaphene	U		12	66	µg/Kg-dry	1	9/25/2017 14:08
Surr: Decachlorobiphenyl	60.0			50-150	%REC	1	9/25/2017 14:08
Surr: Tetrachloro-m-xylene	64.6			50-150	%REC	1	9/25/2017 14:08
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	11		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-4 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 10:05 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-28  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>
4,4'-DDD	23		2.5	12	µg/Kg-dry	1	9/25/2017 14:21
4,4'-DDE	1,200		110	580	µg/Kg-dry	50	9/27/2017 15:00
4,4'-DDT	51		1.8	12	µg/Kg-dry	1	9/25/2017 14:21
Aldrin	U		2.3	12	µg/Kg-dry	1	9/25/2017 14:21
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 14:21
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/25/2017 14:21
beta-BHC	U		2.1	12	µg/Kg-dry	1	9/25/2017 14:21
Chlordane, Technical	U		12	29	µg/Kg-dry	1	9/25/2017 14:21
delta-BHC	U		6.0	12	µg/Kg-dry	1	9/25/2017 14:21
Dieldrin	2.8	J	2.2	12	µg/Kg-dry	1	9/25/2017 14:21
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/25/2017 14:21
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/25/2017 14:21
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/25/2017 14:21
Endrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 14:21
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/25/2017 14:21
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/25/2017 14:21
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/25/2017 14:21
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/25/2017 14:21
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/25/2017 14:21
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/25/2017 14:21
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/25/2017 14:21
Toxaphene	U		13	70	µg/Kg-dry	1	9/25/2017 14:21
Surr: Decachlorobiphenyl	56.1			50-150	%REC	1	9/25/2017 14:21
Surr: Tetrachloro-m-xylene	66.2			50-150	%REC	1	9/25/2017 14:21
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	17		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-4 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 10:08 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-29  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/20/17		Analyst: <b>EB</b>
4,4'-DDD	7.2	J	2.7	12	µg/Kg-dry	1	9/25/2017 14:34
4,4'-DDE	320		24	120	µg/Kg-dry	10	9/27/2017 15:14
4,4'-DDT	11	J	2.0	12	µg/Kg-dry	1	9/25/2017 14:34
Aldrin	U		2.5	12	µg/Kg-dry	1	9/25/2017 14:34
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/25/2017 14:34
alpha-Chlordane	U		2.4	12	µg/Kg-dry	1	9/25/2017 14:34
beta-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 14:34
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/25/2017 14:34
delta-BHC	U		6.5	12	µg/Kg-dry	1	9/25/2017 14:34
Dieldrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 14:34
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/25/2017 14:34
Endosulfan II	U		2.4	12	µg/Kg-dry	1	9/25/2017 14:34
Endosulfan sulfate	U		2.6	12	µg/Kg-dry	1	9/25/2017 14:34
Endrin	U		2.6	12	µg/Kg-dry	1	9/25/2017 14:34
Endrin aldehyde	U		2.2	12	µg/Kg-dry	1	9/25/2017 14:34
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/25/2017 14:34
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/25/2017 14:34
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/25/2017 14:34
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/25/2017 14:34
Heptachlor epoxide	U		2.3	12	µg/Kg-dry	1	9/25/2017 14:34
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/25/2017 14:34
Toxaphene	U		13	75	µg/Kg-dry	1	9/25/2017 14:34
Surr: Decachlorobiphenyl	53.9			50-150	%REC	1	9/25/2017 14:34
Surr: Tetrachloro-m-xylene	77.2			50-150	%REC	1	9/25/2017 14:34
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	23		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-11 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 10:30 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-32  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>	
4,4'-DDD	8.4	J	2.5	12	µg/Kg-dry	1	9/26/2017 02:31
4,4'-DDE	570		44	230	µg/Kg-dry	20	9/27/2017 20:42
4,4'-DDT	74		1.8	12	µg/Kg-dry	1	9/26/2017 02:31
Aldrin	U		2.3	12	µg/Kg-dry	1	9/26/2017 02:31
alpha-BHC	U		2.2	12	µg/Kg-dry	1	9/26/2017 02:31
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/26/2017 02:31
beta-BHC	U		2.1	12	µg/Kg-dry	1	9/26/2017 02:31
Chlordane, Technical	U		11	29	µg/Kg-dry	1	9/26/2017 02:31
delta-BHC	U		6.0	12	µg/Kg-dry	1	9/26/2017 02:31
Dieldrin	U		2.2	12	µg/Kg-dry	1	9/26/2017 02:31
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/26/2017 02:31
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/26/2017 02:31
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/26/2017 02:31
Endrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 02:31
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/26/2017 02:31
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/26/2017 02:31
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/26/2017 02:31
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/26/2017 02:31
Heptachlor	U		3.2	12	µg/Kg-dry	1	9/26/2017 02:31
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/26/2017 02:31
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/26/2017 02:31
Toxaphene	U		12	69	µg/Kg-dry	1	9/26/2017 02:31
Surr: Decachlorobiphenyl	75.0			50-150	%REC	1	9/26/2017 02:31
Surr: Tetrachloro-m-xylene	85.6			50-150	%REC	1	9/26/2017 02:31
<b>MOISTURE</b>							
	Method:SW3550C					Analyst: <b>NW</b>	
Moisture	18		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-11 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 10:33 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-33  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	3.0	J	2.5	12	µg/Kg-dry	1	9/25/2017 23:14
4,4'-DDE	830		110	580	µg/Kg-dry	50	9/27/2017 17:51
4,4'-DDT	50		1.8	12	µg/Kg-dry	1	9/25/2017 23:14
Aldrin	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:14
alpha-BHC	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:14
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:14
beta-BHC	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:14
Chlordane, Technical	U		11	29	µg/Kg-dry	1	9/25/2017 23:14
delta-BHC	U		6.0	12	µg/Kg-dry	1	9/25/2017 23:14
Dieldrin	3.7	J	2.2	12	µg/Kg-dry	1	9/25/2017 23:14
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/25/2017 23:14
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:14
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:14
Endrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:14
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:14
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:14
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/25/2017 23:14
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/25/2017 23:14
Heptachlor	U		3.2	12	µg/Kg-dry	1	9/25/2017 23:14
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:14
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:14
Toxaphene	U		12	69	µg/Kg-dry	1	9/25/2017 23:14
Surr: Decachlorobiphenyl	87.5			50-150	%REC	1	9/25/2017 23:14
Surr: Tetrachloro-m-xylene	95.3			50-150	%REC	1	9/25/2017 23:14
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	16		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-10 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 10:55 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-36  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method:SW8081A			Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>	
4,4'-DDD	3.1	J	2.5	12	µg/Kg-dry	1	9/25/2017 23:27
4,4'-DDE	320		22	120	µg/Kg-dry	10	9/27/2017 18:05
4,4'-DDT	52		1.8	12	µg/Kg-dry	1	9/25/2017 23:27
Aldrin	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:27
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:27
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:27
beta-BHC	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:27
Chlordane, Technical	U		11	29	µg/Kg-dry	1	9/25/2017 23:27
delta-BHC	U		6.0	12	µg/Kg-dry	1	9/25/2017 23:27
Dieldrin	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:27
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/25/2017 23:27
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:27
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:27
Endrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:27
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:27
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:27
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/25/2017 23:27
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/25/2017 23:27
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/25/2017 23:27
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:27
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:27
Toxaphene	U		12	69	µg/Kg-dry	1	9/25/2017 23:27
Surr: Decachlorobiphenyl	74.6			50-150	%REC	1	9/25/2017 23:27
Surr: Tetrachloro-m-xylene	85.5			50-150	%REC	1	9/25/2017 23:27
<b>MOISTURE</b>							
	Method:SW3550C					Analyst: <b>NW</b>	
Moisture	16		0.025	0.050	% of sample	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-10 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 10:58 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-37  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.5	12	µg/Kg-dry	1	9/25/2017 23:40
<b>4,4'-DDE</b>	<b>450</b>		<b>22</b>	<b>120</b>	<b>µg/Kg-dry</b>	10	9/27/2017 18:19
<b>4,4'-DDT</b>	<b>23</b>		<b>1.8</b>	<b>12</b>	<b>µg/Kg-dry</b>	1	9/25/2017 23:40
Aldrin	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:40
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:40
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:40
beta-BHC	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:40
Chlordane, Technical	U		11	29	µg/Kg-dry	1	9/25/2017 23:40
delta-BHC	U		6.0	12	µg/Kg-dry	1	9/25/2017 23:40
Dieldrin	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:40
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/25/2017 23:40
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:40
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:40
Endrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:40
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:40
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:40
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/25/2017 23:40
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/25/2017 23:40
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/25/2017 23:40
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:40
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:40
Toxaphene	U		13	70	µg/Kg-dry	1	9/25/2017 23:40
Surr: Decachlorobiphenyl	76.5			50-150	%REC	1	9/25/2017 23:40
Surr: Tetrachloro-m-xylene	87.1			50-150	%REC	1	9/25/2017 23:40
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>14</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 06:30

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-3 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 11:22 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-40  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	12		2.7	12	µg/Kg-dry	1	9/25/2017 23:53
4,4'-DDE	370		24	120	µg/Kg-dry	10	9/27/2017 19:02
4,4'-DDT	180		20	120	µg/Kg-dry	10	9/27/2017 19:02
Aldrin	U		2.5	12	µg/Kg-dry	1	9/25/2017 23:53
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:53
alpha-Chlordane	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:53
beta-BHC	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:53
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/25/2017 23:53
delta-BHC	U		6.5	12	µg/Kg-dry	1	9/25/2017 23:53
Dieldrin	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:53
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/25/2017 23:53
Endosulfan II	U		2.4	12	µg/Kg-dry	1	9/25/2017 23:53
Endosulfan sulfate	U		2.6	12	µg/Kg-dry	1	9/25/2017 23:53
Endrin	U		2.6	12	µg/Kg-dry	1	9/25/2017 23:53
Endrin aldehyde	U		2.2	12	µg/Kg-dry	1	9/25/2017 23:53
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:53
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/25/2017 23:53
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/25/2017 23:53
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/25/2017 23:53
Heptachlor epoxide	U		2.3	12	µg/Kg-dry	1	9/25/2017 23:53
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/25/2017 23:53
Toxaphene	U		13	75	µg/Kg-dry	1	9/25/2017 23:53
Surr: Decachlorobiphenyl	78.7			50-150	%REC	1	9/25/2017 23:53
Surr: Tetrachloro-m-xylene	91.2			50-150	%REC	1	9/25/2017 23:53
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	24		0.025	0.050	% of sample	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-3 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 11:25 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-41  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.7	12	µg/Kg-dry	1	9/26/2017 00:33
<b>4,4'-DDE</b>	<b>150</b>		<b>12</b>	<b>61</b>	<b>µg/Kg-dry</b>	5	9/27/2017 19:17
<b>4,4'-DDT</b>	<b>13</b>		<b>1.9</b>	<b>12</b>	<b>µg/Kg-dry</b>	1	9/26/2017 00:33
Aldrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 00:33
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/26/2017 00:33
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:33
beta-BHC	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:33
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/26/2017 00:33
delta-BHC	U		6.3	12	µg/Kg-dry	1	9/26/2017 00:33
Dieldrin	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:33
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/26/2017 00:33
Endosulfan II	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:33
Endosulfan sulfate	U		2.5	12	µg/Kg-dry	1	9/26/2017 00:33
Endrin	U		2.5	12	µg/Kg-dry	1	9/26/2017 00:33
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/26/2017 00:33
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:33
gamma-BHC (Lindane)	U		2.9	12	µg/Kg-dry	1	9/26/2017 00:33
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/26/2017 00:33
Heptachlor	U		3.4	12	µg/Kg-dry	1	9/26/2017 00:33
Heptachlor epoxide	U		2.2	12	µg/Kg-dry	1	9/26/2017 00:33
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/26/2017 00:33
Toxaphene	U		13	73	µg/Kg-dry	1	9/26/2017 00:33
Surr: Decachlorobiphenyl	77.8			50-150	%REC	1	9/26/2017 00:33
Surr: Tetrachloro-m-xylene	91.2			50-150	%REC	1	9/26/2017 00:33
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>23</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-9 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 11:45 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-44  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
	Method: <b>SW8081A</b>			Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>	
4,4'-DDD	3.2	J	2.6	12	µg/Kg-dry	1	9/26/2017 00:46
4,4'-DDE	640		45	230	µg/Kg-dry	20	9/27/2017 19:31
4,4'-DDT	40		1.9	12	µg/Kg-dry	1	9/26/2017 00:46
Aldrin	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:46
alpha-BHC	U		2.3	12	µg/Kg-dry	1	9/26/2017 00:46
alpha-Chlordane	U		2.2	12	µg/Kg-dry	1	9/26/2017 00:46
beta-BHC	U		2.1	12	µg/Kg-dry	1	9/26/2017 00:46
Chlordane, Technical	U		12	29	µg/Kg-dry	1	9/26/2017 00:46
delta-BHC	U		6.1	12	µg/Kg-dry	1	9/26/2017 00:46
Dieldrin	U		2.2	12	µg/Kg-dry	1	9/26/2017 00:46
Endosulfan I	U		1.9	12	µg/Kg-dry	1	9/26/2017 00:46
Endosulfan II	U		2.2	12	µg/Kg-dry	1	9/26/2017 00:46
Endosulfan sulfate	U		2.4	12	µg/Kg-dry	1	9/26/2017 00:46
Endrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 00:46
Endrin aldehyde	U		2.0	12	µg/Kg-dry	1	9/26/2017 00:46
Endrin ketone	U		2.2	12	µg/Kg-dry	1	9/26/2017 00:46
gamma-BHC (Lindane)	U		2.8	12	µg/Kg-dry	1	9/26/2017 00:46
gamma-Chlordane	U		2.6	12	µg/Kg-dry	1	9/26/2017 00:46
Heptachlor	U		3.3	12	µg/Kg-dry	1	9/26/2017 00:46
Heptachlor epoxide	U		2.1	12	µg/Kg-dry	1	9/26/2017 00:46
Methoxychlor	U		2.0	12	µg/Kg-dry	1	9/26/2017 00:46
Toxaphene	U		13	70	µg/Kg-dry	1	9/26/2017 00:46
Surr: Decachlorobiphenyl	80.0			50-150	%REC	1	9/26/2017 00:46
Surr: Tetrachloro-m-xylene	88.1			50-150	%REC	1	9/26/2017 00:46
<b>MOISTURE</b>							
	Method: <b>SW3550C</b>					Analyst: <b>NW</b>	
Moisture	18		0.025	0.050	% of sample	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-9 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 11:48 AM

**Work Order:** 1709903  
**Lab ID:** 1709903-45  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.8	13	µg/Kg-dry	1	9/26/2017 00:59
<b>4,4'-DDE</b>	<b>710</b>		<b>49</b>	<b>250</b>	<b>µg/Kg-dry</b>	20	9/27/2017 19:45
<b>4,4'-DDT</b>	<b>17</b>		<b>2.0</b>	<b>13</b>	<b>µg/Kg-dry</b>	1	9/26/2017 00:59
Aldrin	U		2.5	13	µg/Kg-dry	1	9/26/2017 00:59
alpha-BHC	U		2.5	13	µg/Kg-dry	1	9/26/2017 00:59
alpha-Chlordane	U		2.4	13	µg/Kg-dry	1	9/26/2017 00:59
beta-BHC	U		2.3	13	µg/Kg-dry	1	9/26/2017 00:59
Chlordane, Technical	U		13	32	µg/Kg-dry	1	9/26/2017 00:59
delta-BHC	U		6.6	13	µg/Kg-dry	1	9/26/2017 00:59
<b>Dieldrin</b>	<b>3.3</b>	J	<b>2.4</b>	<b>13</b>	<b>µg/Kg-dry</b>	1	9/26/2017 00:59
Endosulfan I	U		2.0	13	µg/Kg-dry	1	9/26/2017 00:59
Endosulfan II	U		2.4	13	µg/Kg-dry	1	9/26/2017 00:59
Endosulfan sulfate	U		2.6	13	µg/Kg-dry	1	9/26/2017 00:59
Endrin	U		2.6	13	µg/Kg-dry	1	9/26/2017 00:59
Endrin aldehyde	U		2.2	13	µg/Kg-dry	1	9/26/2017 00:59
Endrin ketone	U		2.4	13	µg/Kg-dry	1	9/26/2017 00:59
gamma-BHC (Lindane)	U		3.0	13	µg/Kg-dry	1	9/26/2017 00:59
gamma-Chlordane	U		2.9	13	µg/Kg-dry	1	9/26/2017 00:59
Heptachlor	U		3.6	13	µg/Kg-dry	1	9/26/2017 00:59
Heptachlor epoxide	U		2.3	13	µg/Kg-dry	1	9/26/2017 00:59
Methoxychlor	U		2.2	13	µg/Kg-dry	1	9/26/2017 00:59
Toxaphene	U		14	76	µg/Kg-dry	1	9/26/2017 00:59
Surr: Decachlorobiphenyl	78.1			50-150	%REC	1	9/26/2017 00:59
Surr: Tetrachloro-m-xylene	90.8			50-150	%REC	1	9/26/2017 00:59
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>22</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-2 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 12:20 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-48  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.8	13	µg/Kg-dry	1	9/26/2017 01:12
<b>4,4'-DDE</b>	<b>89</b>		<b>2.4</b>	<b>13</b>	<b>µg/Kg-dry</b>	1	9/26/2017 01:12
<b>4,4'-DDT</b>	<b>25</b>		<b>2.0</b>	<b>13</b>	<b>µg/Kg-dry</b>	1	9/26/2017 01:12
Aldrin	U		2.5	13	µg/Kg-dry	1	9/26/2017 01:12
alpha-BHC	U		2.5	13	µg/Kg-dry	1	9/26/2017 01:12
alpha-Chlordane	U		2.4	13	µg/Kg-dry	1	9/26/2017 01:12
beta-BHC	U		2.3	13	µg/Kg-dry	1	9/26/2017 01:12
Chlordane, Technical	U		13	32	µg/Kg-dry	1	9/26/2017 01:12
delta-BHC	U		6.6	13	µg/Kg-dry	1	9/26/2017 01:12
Dieldrin	U		2.4	13	µg/Kg-dry	1	9/26/2017 01:12
Endosulfan I	U		2.0	13	µg/Kg-dry	1	9/26/2017 01:12
Endosulfan II	U		2.4	13	µg/Kg-dry	1	9/26/2017 01:12
Endosulfan sulfate	U		2.6	13	µg/Kg-dry	1	9/26/2017 01:12
Endrin	U		2.6	13	µg/Kg-dry	1	9/26/2017 01:12
Endrin aldehyde	U		2.2	13	µg/Kg-dry	1	9/26/2017 01:12
Endrin ketone	U		2.4	13	µg/Kg-dry	1	9/26/2017 01:12
gamma-BHC (Lindane)	U		3.0	13	µg/Kg-dry	1	9/26/2017 01:12
gamma-Chlordane	U		2.9	13	µg/Kg-dry	1	9/26/2017 01:12
Heptachlor	U		3.6	13	µg/Kg-dry	1	9/26/2017 01:12
Heptachlor epoxide	U		2.3	13	µg/Kg-dry	1	9/26/2017 01:12
Methoxychlor	U		2.2	13	µg/Kg-dry	1	9/26/2017 01:12
Toxaphene	U		14	76	µg/Kg-dry	1	9/26/2017 01:12
Surr: Decachlorobiphenyl	77.9			50-150	%REC	1	9/26/2017 01:12
Surr: Tetrachloro-m-xylene	91.4			50-150	%REC	1	9/26/2017 01:12
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>22</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-2 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 12:23 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-49  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.5	11	µg/Kg-dry	1	9/26/2017 01:25
<b>4,4'-DDE</b>	<b>62</b>		<b>2.2</b>	<b>11</b>	<b>µg/Kg-dry</b>	1	9/26/2017 01:25
<b>4,4'-DDT</b>	<b>5.3</b>	J	<b>1.8</b>	<b>11</b>	<b>µg/Kg-dry</b>	1	9/26/2017 01:25
Aldrin	U		2.3	11	µg/Kg-dry	1	9/26/2017 01:25
alpha-BHC	U		2.2	11	µg/Kg-dry	1	9/26/2017 01:25
alpha-Chlordane	U		2.2	11	µg/Kg-dry	1	9/26/2017 01:25
beta-BHC	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:25
Chlordane, Technical	U		11	29	µg/Kg-dry	1	9/26/2017 01:25
delta-BHC	U		5.9	11	µg/Kg-dry	1	9/26/2017 01:25
Dieldrin	U		2.2	11	µg/Kg-dry	1	9/26/2017 01:25
Endosulfan I	U		1.8	11	µg/Kg-dry	1	9/26/2017 01:25
Endosulfan II	U		2.2	11	µg/Kg-dry	1	9/26/2017 01:25
Endosulfan sulfate	U		2.4	11	µg/Kg-dry	1	9/26/2017 01:25
Endrin	U		2.3	11	µg/Kg-dry	1	9/26/2017 01:25
Endrin aldehyde	U		2.0	11	µg/Kg-dry	1	9/26/2017 01:25
Endrin ketone	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:25
gamma-BHC (Lindane)	U		2.7	11	µg/Kg-dry	1	9/26/2017 01:25
gamma-Chlordane	U		2.6	11	µg/Kg-dry	1	9/26/2017 01:25
Heptachlor	U		3.2	11	µg/Kg-dry	1	9/26/2017 01:25
Heptachlor epoxide	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:25
Methoxychlor	U		2.0	11	µg/Kg-dry	1	9/26/2017 01:25
Toxaphene	U		12	68	µg/Kg-dry	1	9/26/2017 01:25
Surr: Decachlorobiphenyl	84.7			50-150	%REC	1	9/26/2017 01:25
Surr: Tetrachloro-m-xylene	93.2			50-150	%REC	1	9/26/2017 01:25
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>16</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-8 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 12:38 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-52  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.7	12	µg/Kg-dry	1	9/26/2017 01:38
<b>4,4'-DDE</b>	<b>70</b>		<b>2.4</b>	<b>12</b>	<b>µg/Kg-dry</b>	1	9/26/2017 01:38
<b>4,4'-DDT</b>	<b>15</b>		<b>2.0</b>	<b>12</b>	<b>µg/Kg-dry</b>	1	9/26/2017 01:38
Aldrin	U		2.5	12	µg/Kg-dry	1	9/26/2017 01:38
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/26/2017 01:38
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/26/2017 01:38
beta-BHC	U		2.3	12	µg/Kg-dry	1	9/26/2017 01:38
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/26/2017 01:38
delta-BHC	U		6.4	12	µg/Kg-dry	1	9/26/2017 01:38
Dieldrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 01:38
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/26/2017 01:38
Endosulfan II	U		2.3	12	µg/Kg-dry	1	9/26/2017 01:38
Endosulfan sulfate	U		2.6	12	µg/Kg-dry	1	9/26/2017 01:38
Endrin	U		2.5	12	µg/Kg-dry	1	9/26/2017 01:38
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/26/2017 01:38
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/26/2017 01:38
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/26/2017 01:38
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/26/2017 01:38
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/26/2017 01:38
Heptachlor epoxide	U		2.3	12	µg/Kg-dry	1	9/26/2017 01:38
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/26/2017 01:38
Toxaphene	U		13	74	µg/Kg-dry	1	9/26/2017 01:38
Surr: Decachlorobiphenyl	79.2			50-150	%REC	1	9/26/2017 01:38
Surr: Tetrachloro-m-xylene	85.5			50-150	%REC	1	9/26/2017 01:38
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>21</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-8 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 12:41 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-53  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.5	11	µg/Kg-dry	1	9/26/2017 17:12
<b>4,4'-DDE</b>	<b>34</b>		<b>2.2</b>	<b>11</b>	<b>µg/Kg-dry</b>	1	9/26/2017 17:12
<b>4,4'-DDT</b>	<b>4.6</b>	J	<b>1.8</b>	<b>11</b>	<b>µg/Kg-dry</b>	1	9/26/2017 17:12
Aldrin	U		2.3	11	µg/Kg-dry	1	9/26/2017 17:12
alpha-BHC	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:12
alpha-Chlordane	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:12
beta-BHC	U		2.1	11	µg/Kg-dry	1	9/26/2017 17:12
Chlordane, Technical	U		11	29	µg/Kg-dry	1	9/26/2017 17:12
delta-BHC	U		6.0	11	µg/Kg-dry	1	9/26/2017 17:12
Dieldrin	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:12
Endosulfan I	U		1.8	11	µg/Kg-dry	1	9/26/2017 17:12
Endosulfan II	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:12
Endosulfan sulfate	U		2.4	11	µg/Kg-dry	1	9/26/2017 17:12
Endrin	U		2.4	11	µg/Kg-dry	1	9/26/2017 17:12
Endrin aldehyde	U		2.0	11	µg/Kg-dry	1	9/26/2017 17:12
Endrin ketone	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:12
gamma-BHC (Lindane)	U		2.8	11	µg/Kg-dry	1	9/26/2017 17:12
gamma-Chlordane	U		2.6	11	µg/Kg-dry	1	9/26/2017 17:12
Heptachlor	U		3.2	11	µg/Kg-dry	1	9/26/2017 17:12
Heptachlor epoxide	U		2.1	11	µg/Kg-dry	1	9/26/2017 17:12
Methoxychlor	U		2.0	11	µg/Kg-dry	1	9/26/2017 17:12
Toxaphene	U		12	69	µg/Kg-dry	1	9/26/2017 17:12
Surr: Decachlorobiphenyl	82.5			50-150	%REC	1	9/26/2017 17:12
Surr: Tetrachloro-m-xylene	94.9			50-150	%REC	1	9/26/2017 17:12
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>17</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-1 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 01:00 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-56  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	21		2.4	11	µg/Kg-dry	1	9/26/2017 01:52
4,4'-DDE	1,300		210	1,100	µg/Kg-dry	100	9/27/2017 20:28
4,4'-DDT	310		17	110	µg/Kg-dry	10	9/27/2017 20:14
Aldrin	U		2.2	11	µg/Kg-dry	1	9/26/2017 01:52
alpha-BHC	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:52
alpha-Chlordane	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:52
beta-BHC	U		2.0	11	µg/Kg-dry	1	9/26/2017 01:52
Chlordane, Technical	U		11	27	µg/Kg-dry	1	9/26/2017 01:52
delta-BHC	U		5.7	11	µg/Kg-dry	1	9/26/2017 01:52
Dieldrin	21		2.1	11	µg/Kg-dry	1	9/26/2017 01:52
Endosulfan I	U		1.8	11	µg/Kg-dry	1	9/26/2017 01:52
Endosulfan II	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:52
Endosulfan sulfate	U		2.3	11	µg/Kg-dry	1	9/26/2017 01:52
Endrin	U		2.3	11	µg/Kg-dry	1	9/26/2017 01:52
Endrin aldehyde	U		1.9	11	µg/Kg-dry	1	9/26/2017 01:52
Endrin ketone	U		2.1	11	µg/Kg-dry	1	9/26/2017 01:52
gamma-BHC (Lindane)	U		2.6	11	µg/Kg-dry	1	9/26/2017 01:52
gamma-Chlordane	U		2.5	11	µg/Kg-dry	1	9/26/2017 01:52
Heptachlor	U		3.1	11	µg/Kg-dry	1	9/26/2017 01:52
Heptachlor epoxide	U		2.0	11	µg/Kg-dry	1	9/26/2017 01:52
Methoxychlor	U		1.9	11	µg/Kg-dry	1	9/26/2017 01:52
Toxaphene	U		12	66	µg/Kg-dry	1	9/26/2017 01:52
Surr: Decachlorobiphenyl	66.1			50-150	%REC	1	9/26/2017 01:52
Surr: Tetrachloro-m-xylene	65.4			50-150	%REC	1	9/26/2017 01:52
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	14		0.025	0.050	% of sample	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 29-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II  
**Sample ID:** MA-DP-1 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 01:03 PM

**Work Order:** 1709903  
**Lab ID:** 1709903-57  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.5	11	µg/Kg-dry	1	9/26/2017 17:27
<b>4,4'-DDE</b>	<b>110</b>	J	<b>22</b>	<b>110</b>	<b>µg/Kg-dry</b>	10	9/27/2017 20:57
<b>4,4'-DDT</b>	<b>28</b>		<b>1.8</b>	<b>11</b>	<b>µg/Kg-dry</b>	1	9/26/2017 17:27
Aldrin	U		2.3	11	µg/Kg-dry	1	9/26/2017 17:27
alpha-BHC	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:27
alpha-Chlordane	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:27
beta-BHC	U		2.1	11	µg/Kg-dry	1	9/26/2017 17:27
Chlordane, Technical	U		11	28	µg/Kg-dry	1	9/26/2017 17:27
delta-BHC	U		5.9	11	µg/Kg-dry	1	9/26/2017 17:27
Dieldrin	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:27
Endosulfan I	U		1.8	11	µg/Kg-dry	1	9/26/2017 17:27
Endosulfan II	U		2.2	11	µg/Kg-dry	1	9/26/2017 17:27
Endosulfan sulfate	U		2.3	11	µg/Kg-dry	1	9/26/2017 17:27
Endrin	U		2.3	11	µg/Kg-dry	1	9/26/2017 17:27
Endrin aldehyde	U		2.0	11	µg/Kg-dry	1	9/26/2017 17:27
Endrin ketone	U		2.1	11	µg/Kg-dry	1	9/26/2017 17:27
gamma-BHC (Lindane)	U		2.7	11	µg/Kg-dry	1	9/26/2017 17:27
gamma-Chlordane	U		2.6	11	µg/Kg-dry	1	9/26/2017 17:27
Heptachlor	U		3.2	11	µg/Kg-dry	1	9/26/2017 17:27
Heptachlor epoxide	U		2.1	11	µg/Kg-dry	1	9/26/2017 17:27
Methoxychlor	U		2.0	11	µg/Kg-dry	1	9/26/2017 17:27
Toxaphene	U		12	68	µg/Kg-dry	1	9/26/2017 17:27
Surr: Decachlorobiphenyl	88.4			50-150	%REC	1	9/26/2017 17:27
Surr: Tetrachloro-m-xylene	93.1			50-150	%REC	1	9/26/2017 17:27
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
<b>Moisture</b>	<b>14</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/22/2017 07:20

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

**QC BATCH REPORT**

Batch ID: **107637** Instrument ID **GC12** Method: **SW8081A**

MBLK		Sample ID: <b>PBLKS1-107637-107637</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2017 02:10 PM</b>			
Client ID:		Run ID: <b>GC12_170920A</b>				SeqNo: <b>4648810</b>		Prep Date: <b>9/20/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	2.2	10								
4,4'-DDE	U	1.9	10								
4,4'-DDT	U	1.6	10								
Aldrin	U	2	10								
alpha-BHC	U	2	10								
alpha-Chlordane	U	1.9	10								
beta-BHC	U	1.8	10								
Chlordane, Technical	U	9.9	25								
delta-BHC	U	5.2	10								
Dieldrin	U	1.9	10								
Endosulfan I	U	1.6	10								
Endosulfan II	U	1.9	10								
Endosulfan sulfate	U	2.1	10								
Endrin	U	2.1	10								
Endrin aldehyde	U	1.7	10								
Endrin ketone	U	1.9	10								
gamma-BHC (Lindane)	U	2.4	10								
gamma-Chlordane	U	2.3	10								
Heptachlor	U	2.8	10								
Heptachlor epoxide	U	1.8	10								
Methoxychlor	U	1.7	10								
Toxaphene	U	11	60								
Surr: Decachlorobiphenyl	27.79	0	0	33.3	0	83.5	50-150	0			
Surr: Tetrachloro-m-xylene	28.88	0	0	33.3	0	86.7	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107637**      Instrument ID **GC12**      Method: **SW8081A**

LCS					Sample ID: <b>PLCSS1-107637-107637</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/20/2017 02:23 PM</b>		
Client ID:					Run ID: <b>GC12_170920A</b>			SeqNo: <b>4648811</b>		Prep Date: <b>9/20/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	31.1	2.2	10	33.33	0	93.3	50-150	0				
4,4'-DDE	30.77	1.9	10	33.33	0	92.3	50-150	0				
4,4'-DDT	28.73	1.6	10	33.33	0	86.2	50-150	0				
Aldrin	31.06	2	10	33.33	0	93.2	50-150	0				
alpha-BHC	31.6	2	10	33.33	0	94.8	50-150	0				
alpha-Chlordane	29.79	1.9	10	33.33	0	89.4	50-150	0				
beta-BHC	29.35	1.8	10	33.33	0	88.1	50-150	0				
delta-BHC	31.58	5.2	10	33.33	0	94.7	50-150	0				
Dieldrin	30.59	1.9	10	33.33	0	91.8	50-150	0				
Endosulfan I	29.8	1.6	10	33.33	0	89.4	50-150	0				
Endosulfan II	29.64	1.9	10	33.33	0	88.9	50-150	0				
Endosulfan sulfate	29.82	2.1	10	33.33	0	89.5	50-150	0				
Endrin	28.53	2.1	10	33.33	0	85.6	50-150	0				
Endrin aldehyde	29.75	1.7	10	33.33	0	89.3	50-150	0				
Endrin ketone	30.46	1.9	10	33.33	0	91.4	50-150	0				
gamma-BHC (Lindane)	31.27	2.4	10	33.33	0	93.8	50-150	0				
gamma-Chlordane	30.4	2.3	10	33.33	0	91.2	50-150	0				
Heptachlor	30.33	2.8	10	33.33	0	91	50-150	0				
Heptachlor epoxide	29.79	1.8	10	33.33	0	89.4	50-150	0				
Methoxychlor	28.6	1.7	10	33.33	0	85.8	50-150	0				
Surr: Decachlorobiphenyl	28.52	0	0	33.3	0	85.7	50-150	0				
Surr: Tetrachloro-m-xylene	30.42	0	0	33.3	0	91.3	50-150	0				

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107637**      Instrument ID **GC12**      Method: **SW8081A**

MS					Sample ID: 1709903-32A MS			Units: µg/Kg		Analysis Date: 9/20/2017 02:49 PM		
Client ID: MA-DP-11 (0'-0.5') Grab			Run ID: GC12_170920A			SeqNo: 4648813		Prep Date: 9/20/2017		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	18.11	2.2	9.9	32.9	8.064	30.5	50-150	0			S	
4,4'-DDE	495.1	1.9	9.9	32.9	556.8	-188	50-150	0			SEO	
4,4'-DDT	86	1.6	9.9	32.9	72.91	39.8	50-150	0			SE	
Aldrin	13.15	2	9.9	32.9	0	40	50-150	0			S	
alpha-BHC	10.34	1.9	9.9	32.9	0	31.4	50-150	0			S	
alpha-Chlordane	11.65	1.9	9.9	32.9	0	35.4	50-150	0			S	
beta-BHC	7.545	1.8	9.9	32.9	0.8598	20.3	50-150	0			JS	
delta-BHC	U	5.1	9.9	32.9	0	0	50-150	0			S	
Dieldrin	10.99	1.9	9.9	32.9	0	33.4	50-150	0			S	
Endosulfan I	4.717	1.6	9.9	32.9	0	14.3	50-150	0			JS	
Endosulfan II	2.668	1.9	9.9	32.9	0	8.11	50-150	0			JS	
Endosulfan sulfate	3.799	2	9.9	32.9	0	11.5	50-150	0			JS	
Endrin	6.701	2	9.9	32.9	0	20.4	50-150	0			JS	
Endrin aldehyde	2.32	1.7	9.9	32.9	0	7.05	50-150	0			JS	
Endrin ketone	3.348	1.9	9.9	32.9	0	10.2	50-150	0			JS	
gamma-BHC (Lindane)	10.4	2.4	9.9	32.9	0.2064	31	50-150	0			S	
gamma-Chlordane	10.81	2.2	9.9	32.9	0	32.8	50-150	0			S	
Heptachlor	7.357	2.8	9.9	32.9	0	22.4	50-150	0			JS	
Heptachlor epoxide	12.87	1.8	9.9	32.9	0	39.1	50-150	0			S	
Methoxychlor	4.338	1.7	9.9	32.9	0	13.2	50-150	0			JS	
Surr: Decachlorobiphenyl	12.35	0	0	32.87	0	37.6	50-150	0			S	
Surr: Tetrachloro-m-xylene	11.42	0	0	32.87	0	34.7	50-150	0			S	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107637** Instrument ID **GC12** Method: **SW8081A**

MSD					Sample ID: 1709903-32A MSD			Units: µg/Kg		Analysis Date: 9/20/2017 03:02 PM		
Client ID: MA-DP-11 (0'-0.5') Grab				Run ID: GC12_170920A			SeqNo: 4648814		Prep Date: 9/20/2017		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	36.6	2.2	9.8	32.78	8.064	87.1	50-150	18.11	67.6	35	R	
4,4'-DDE	998	1.9	9.8	32.78	556.8	1350	50-150	495.1	67.4	35	SREO	
4,4'-DDT	178.9	1.6	9.8	32.78	72.91	323	50-150	86	70.1	35	SRE	
Aldrin	28.28	2	9.8	32.78	0	86.3	50-150	13.15	73	35	R	
alpha-BHC	26.93	1.9	9.8	32.78	0	82.1	50-150	10.34	89	35	R	
alpha-Chlordane	26.56	1.9	9.8	32.78	0	81	50-150	11.65	78	35	R	
beta-BHC	20.25	1.8	9.8	32.78	0.8598	59.2	50-150	7.545	91.4	35	R	
delta-BHC	15.72	5.1	9.8	32.78	0	48	50-150	4.203	116	35	SR	
Dieldrin	27.67	1.9	9.8	32.78	0	84.4	50-150	10.99	86.3	35	R	
Endosulfan I	13.45	1.6	9.8	32.78	0	41	50-150	4.717	96.1	35	SR	
Endosulfan II	4.545	1.9	9.8	32.78	0	13.9	50-150	2.668	0	35	JS	
Endosulfan sulfate	7.612	2	9.8	32.78	0	23.2	50-150	3.799	0	35	JS	
Endrin	21.83	2	9.8	32.78	0	66.6	50-150	6.701	106	35	R	
Endrin aldehyde	3.557	1.7	9.8	32.78	0	10.9	50-150	2.32	0	35	JS	
Endrin ketone	9.896	1.8	9.8	32.78	0	30.2	50-150	3.348	98.9	35	SR	
gamma-BHC (Lindane)	25.69	2.4	9.8	32.78	0.2064	77.8	50-150	10.4	84.7	35	R	
gamma-Chlordane	25.72	2.2	9.8	32.78	0	78.5	50-150	10.81	81.7	35	R	
Heptachlor	20.91	2.8	9.8	32.78	0	63.8	50-150	7.357	95.9	35	R	
Heptachlor epoxide	29.64	1.8	9.8	32.78	0	90.4	50-150	12.87	78.9	35	R	
Methoxychlor	14.21	1.7	9.8	32.78	0	43.4	50-150	4.338	106	35	SR	
Surr: Decachlorobiphenyl	25.4	0	0	32.75	0	77.6	50-150	12.35	69.1	35	R	
Surr: Tetrachloro-m-xylene	28.15	0	0	32.75	0	86	50-150	11.42	84.6	35	R	

The following samples were analyzed in this batch:

1709903-22A	1709903-23A	1709903-24A
1709903-25A	1709903-26A	1709903-27A
1709903-28A	1709903-29A	1709903-30A
1709903-31A	1709903-32A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107638**      Instrument ID **GC12**      Method: **SW8081A**

MBLK		Sample ID: <b>PBLKS1-107638-107638</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>9/25/2017 10:37 AM</b>		
Client ID:		Run ID: <b>GC12_170925A</b>				SeqNo: <b>4655932</b>			Prep Date: <b>9/21/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	2.2	10								
4,4'-DDE	U	1.9	10								
4,4'-DDT	U	1.6	10								
Aldrin	U	2	10								
alpha-BHC	U	2	10								
alpha-Chlordane	U	1.9	10								
beta-BHC	U	1.8	10								
Chlordane, Technical	U	9.9	25								
delta-BHC	U	5.2	10								
Dieldrin	U	1.9	10								
Endosulfan I	U	1.6	10								
Endosulfan II	U	1.9	10								
Endosulfan sulfate	U	2.1	10								
Endrin	U	2.1	10								
Endrin aldehyde	U	1.7	10								
Endrin ketone	U	1.9	10								
gamma-BHC (Lindane)	U	2.4	10								
gamma-Chlordane	U	2.3	10								
Heptachlor	U	2.8	10								
Heptachlor epoxide	U	1.8	10								
Methoxychlor	U	1.7	10								
Toxaphene	U	11	60								
Surr: Decachlorobiphenyl	28.46	0	0	33.3	0	85.5	50-150	0			
Surr: Tetrachloro-m-xylene	30.32	0	0	33.3	0	91.1	50-150	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107638**      Instrument ID **GC12**      Method: **SW8081A**

LCS					Sample ID: <b>PLCSS1-107638-107638</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/25/2017 10:51 AM</b>		
Client ID:					Run ID: <b>GC12_170925A</b>			SeqNo: <b>4655933</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	33.57	2.2	10	33.33	0	101	50-150	0				
4,4'-DDE	32.67	1.9	10	33.33	0	98	50-150	0				
4,4'-DDT	30.46	1.6	10	33.33	0	91.4	50-150	0				
Aldrin	33.09	2	10	33.33	0	99.3	50-150	0				
alpha-BHC	34.64	2	10	33.33	0	104	50-150	0				
alpha-Chlordane	32.46	1.9	10	33.33	0	97.4	50-150	0				
beta-BHC	31.91	1.8	10	33.33	0	95.7	50-150	0				
delta-BHC	34.61	5.2	10	33.33	0	104	50-150	0				
Dieldrin	33.08	1.9	10	33.33	0	99.2	50-150	0				
Endosulfan I	33.29	1.6	10	33.33	0	99.9	50-150	0				
Endosulfan II	32.71	1.9	10	33.33	0	98.1	50-150	0				
Endosulfan sulfate	30.88	2.1	10	33.33	0	92.6	50-150	0				
Endrin	34.1	2.1	10	33.33	0	102	50-150	0				
Endrin aldehyde	31.7	1.7	10	33.33	0	95.1	50-150	0				
Endrin ketone	32.35	1.9	10	33.33	0	97	50-150	0				
gamma-BHC (Lindane)	34.33	2.4	10	33.33	0	103	50-150	0				
gamma-Chlordane	33.11	2.3	10	33.33	0	99.3	50-150	0				
Heptachlor	32.8	2.8	10	33.33	0	98.4	50-150	0				
Heptachlor epoxide	32.8	1.8	10	33.33	0	98.4	50-150	0				
Methoxychlor	29.27	1.7	10	33.33	0	87.8	50-150	0				
Surr: Decachlorobiphenyl	29.33	0	0	33.3	0	88.1	50-150	0				
Surr: Tetrachloro-m-xylene	31.6	0	0	33.3	0	94.9	50-150	0				

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107638** Instrument ID **GC12** Method: **SW8081A**

MS					Units: µg/Kg			Analysis Date: 9/25/2017 10:47 PM			
Sample ID: 1709903-39A MS					Client ID: MA-DP-10 (1.5'-2.0') Grab			Run ID: GC12_170926A			SeqNo: 4659996
								Prep Date: 9/21/2017			DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	32.51	2.1	9.8	32.61	0.218	99	50-150	0			
4,4'-DDE	78.34	1.9	9.8	32.61	26.75	158	50-150	0			S
4,4'-DDT	36.5	1.6	9.8	32.61	2.91	103	50-150	0			
Aldrin	30.42	1.9	9.8	32.61	0	93.3	50-150	0			
alpha-BHC	32.08	1.9	9.8	32.61	0	98.4	50-150	0			
alpha-Chlordane	30.18	1.9	9.8	32.61	0	92.5	50-150	0			
beta-BHC	29.18	1.8	9.8	32.61	0	89.5	50-150	0			
delta-BHC	32.37	5.1	9.8	32.61	0	99.3	50-150	0			
Dieldrin	31.06	1.9	9.8	32.61	0.202	94.6	50-150	0			
Endosulfan I	31.3	1.6	9.8	32.61	0	96	50-150	0			
Endosulfan II	31	1.9	9.8	32.61	0	95.1	50-150	0			
Endosulfan sulfate	29.97	2	9.8	32.61	0	91.9	50-150	0			
Endrin	32.06	2	9.8	32.61	0	98.3	50-150	0			
Endrin aldehyde	27.82	1.7	9.8	32.61	0	85.3	50-150	0			
Endrin ketone	32.52	1.8	9.8	32.61	0	99.7	50-150	0			
gamma-BHC (Lindane)	31.54	2.3	9.8	32.61	0	96.7	50-150	0			
gamma-Chlordane	30.17	2.2	9.8	32.61	0	92.5	50-150	0			
Heptachlor	31.77	2.8	9.8	32.61	0	97.4	50-150	0			
Heptachlor epoxide	30.62	1.8	9.8	32.61	0	93.9	50-150	0			
Methoxychlor	29.27	1.7	9.8	32.61	0	89.8	50-150	0			
Surr: Decachlorobiphenyl	29	0	0	32.58	0	89	50-150	0			
Surr: Tetrachloro-m-xylene	28.61	0	0	32.58	0	87.8	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107638** Instrument ID **GC12** Method: **SW8081A**

MSD					Sample ID: 1709903-39A MSD			Units: µg/Kg		Analysis Date: 9/25/2017 11:01 PM	
Client ID: MA-DP-10 (1.5'-2.0') Grab					Run ID: GC12_170926A			SeqNo: 4659997		Prep Date: 9/21/2017	
										DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	32.01	2.1	9.7	32.25	0.218	98.6	50-150	32.51	1.55	35	
4,4'-DDE	73.65	1.9	9.7	32.25	26.75	145	50-150	78.34	6.17	35	
4,4'-DDT	35.32	1.5	9.7	32.25	2.91	100	50-150	36.5	3.29	35	
Aldrin	30.13	1.9	9.7	32.25	0	93.4	50-150	30.42	0.949	35	
alpha-BHC	31.92	1.9	9.7	32.25	0	99	50-150	32.08	0.511	35	
alpha-Chlordane	29.74	1.8	9.7	32.25	0	92.2	50-150	30.18	1.48	35	
beta-BHC	28.87	1.8	9.7	32.25	0	89.5	50-150	29.18	1.05	35	
delta-BHC	31.67	5	9.7	32.25	0	98.2	50-150	32.37	2.2	35	
Dieldrin	30.66	1.8	9.7	32.25	0.202	94.4	50-150	31.06	1.31	35	
Endosulfan I	30.89	1.6	9.7	32.25	0	95.8	50-150	31.3	1.32	35	
Endosulfan II	30.28	1.8	9.7	32.25	0	93.9	50-150	31	2.35	35	
Endosulfan sulfate	29.15	2	9.7	32.25	0	90.4	50-150	29.97	2.79	35	
Endrin	30.02	2	9.7	32.25	0	93.1	50-150	32.06	6.57	35	
Endrin aldehyde	26.17	1.7	9.7	32.25	0	81.1	50-150	27.82	6.12	35	
Endrin ketone	30.69	1.8	9.7	32.25	0	95.2	50-150	32.52	5.8	35	
gamma-BHC (Lindane)	31.34	2.3	9.7	32.25	0	97.2	50-150	31.54	0.619	35	
gamma-Chlordane	29.75	2.2	9.7	32.25	0	92.2	50-150	30.17	1.41	35	
Heptachlor	31.15	2.7	9.7	32.25	0	96.6	50-150	31.77	1.95	35	
Heptachlor epoxide	30.3	1.8	9.7	32.25	0	94	50-150	30.62	1.05	35	
Methoxychlor	28.31	1.7	9.7	32.25	0	87.8	50-150	29.27	3.32	35	
Surr: Decachlorobiphenyl	26.91	0	0	32.22	0	83.5	50-150	29	7.46	35	
Surr: Tetrachloro-m-xylene	28.53	0	0	32.22	0	88.5	50-150	28.61	0.269	35	

The following samples were analyzed in this batch:

1709903-33A	1709903-34A	1709903-35A
1709903-36A	1709903-37A	1709903-38A
1709903-39A	1709903-40A	1709903-41A
1709903-42A	1709903-43A	1709903-44A
1709903-45A	1709903-46A	1709903-47A
1709903-48A	1709903-49A	1709903-50A
1709903-51A	1709903-52A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107721**      Instrument ID **GC12**      Method: **SW8081A**

MBLK		Sample ID: <b>PBLKS1-107721-107721</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/25/2017 11:04 AM</b>			
Client ID:		Run ID: <b>GC12_170925A</b>				SeqNo: <b>4655934</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	2.2	10								
4,4'-DDE	U	1.9	10								
4,4'-DDT	U	1.6	10								
Aldrin	U	2	10								
alpha-BHC	U	2	10								
alpha-Chlordane	U	1.9	10								
beta-BHC	U	1.8	10								
Chlordane, Technical	U	9.9	25								
delta-BHC	U	5.2	10								
Dieldrin	U	1.9	10								
Endosulfan I	U	1.6	10								
Endosulfan II	U	1.9	10								
Endosulfan sulfate	U	2.1	10								
Endrin	U	2.1	10								
Endrin aldehyde	U	1.7	10								
Endrin ketone	U	1.9	10								
gamma-BHC (Lindane)	U	2.4	10								
gamma-Chlordane	U	2.3	10								
Heptachlor	U	2.8	10								
Heptachlor epoxide	U	1.8	10								
Methoxychlor	U	1.7	10								
Toxaphene	U	11	60								
Surr: Decachlorobiphenyl	29.26	0	0	33.3	0	87.9	50-150	0			
Surr: Tetrachloro-m-xylene	31.25	0	0	33.3	0	93.8	50-150	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107721** Instrument ID **GC12** Method: **SW8081A**

LCS		Sample ID: <b>PLCSS1-107721-107721</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/25/2017 11:17 AM</b>			
Client ID:		Run ID: <b>GC12_170925A</b>				SeqNo: <b>4655935</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	32.19	2.2	10	33.33	0	96.6	50-150	0			
4,4'-DDE	31.37	1.9	10	33.33	0	94.1	50-150	0			
4,4'-DDT	28.4	1.6	10	33.33	0	85.2	50-150	0			
Aldrin	31.78	2	10	33.33	0	95.4	50-150	0			
alpha-BHC	32.96	2	10	33.33	0	98.9	50-150	0			
alpha-Chlordane	31.09	1.9	10	33.33	0	93.3	50-150	0			
beta-BHC	30.34	1.8	10	33.33	0	91	50-150	0			
delta-BHC	32.63	5.2	10	33.33	0	97.9	50-150	0			
Dieldrin	31.66	1.9	10	33.33	0	95	50-150	0			
Endosulfan I	31.87	1.6	10	33.33	0	95.6	50-150	0			
Endosulfan II	31.21	1.9	10	33.33	0	93.6	50-150	0			
Endosulfan sulfate	29.3	2.1	10	33.33	0	87.9	50-150	0			
Endrin	31.47	2.1	10	33.33	0	94.4	50-150	0			
Endrin aldehyde	30.36	1.7	10	33.33	0	91.1	50-150	0			
Endrin ketone	31.09	1.9	10	33.33	0	93.3	50-150	0			
gamma-BHC (Lindane)	32.64	2.4	10	33.33	0	97.9	50-150	0			
gamma-Chlordane	31.7	2.3	10	33.33	0	95.1	50-150	0			
Heptachlor	30.58	2.8	10	33.33	0	91.7	50-150	0			
Heptachlor epoxide	31.37	1.8	10	33.33	0	94.1	50-150	0			
Methoxychlor	27.03	1.7	10	33.33	0	81.1	50-150	0			
Surr: Decachlorobiphenyl	28.68	0	0	33.3	0	86.1	50-150	0			
Surr: Tetrachloro-m-xylene	31.08	0	0	33.3	0	93.3	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

## QC BATCH REPORT

Batch ID: **107721** Instrument ID **GC12** Method: **SW8081A**

MS					Sample ID: 1709903-56A MS			Units: µg/Kg		Analysis Date: 9/26/2017 02:05 AM		
Client ID: MA-DP-1 (0'-0.5') Grab				Run ID: GC12_170926A			SeqNo: 4660009		Prep Date: 9/21/2017		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	43.6	2.2	9.8	32.72	18.24	77.5	50-150	0				
4,4'-DDE	1101	1.9	9.8	32.72	1013	269	50-150	0			SEO	
4,4'-DDT	349	1.6	9.8	32.72	309.5	121	50-150	0			EO	
Aldrin	19.4	2	9.8	32.72	0	59.3	50-150	0				
alpha-BHC	21.9	1.9	9.8	32.72	0	66.9	50-150	0				
alpha-Chlordane	19.97	1.9	9.8	32.72	0	61	50-150	0				
beta-BHC	18.69	1.8	9.8	32.72	0	57.1	50-150	0				
delta-BHC	21.13	5.1	9.8	32.72	0	64.6	50-150	0				
Dieldrin	43.95	1.9	9.8	32.72	18.16	78.8	50-150	0				
Endosulfan I	21.32	1.6	9.8	32.72	0.3251	64.2	50-150	0				
Endosulfan II	22.66	1.9	9.8	32.72	0	69.2	50-150	0				
Endosulfan sulfate	25.14	2	9.8	32.72	0	76.8	50-150	0				
Endrin	26.47	2	9.8	32.72	1.498	76.3	50-150	0				
Endrin aldehyde	18.92	1.7	9.8	32.72	0	57.8	50-150	0				
Endrin ketone	21.89	1.8	9.8	32.72	1.544	62.2	50-150	0				
gamma-BHC (Lindane)	20.58	2.4	9.8	32.72	0	62.9	50-150	0				
gamma-Chlordane	18.91	2.2	9.8	32.72	0	57.8	50-150	0				
Heptachlor	21.16	2.8	9.8	32.72	0	64.7	50-150	0				
Heptachlor epoxide	26.44	1.8	9.8	32.72	0	80.8	50-150	0				
Methoxychlor	21.67	1.7	9.8	32.72	0	66.2	50-150	0				
Surr: Decachlorobiphenyl	20.5	0	0	32.69	0	62.7	50-150	0				
Surr: Tetrachloro-m-xylene	20.42	0	0	32.69	0	62.5	50-150	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107721** Instrument ID **GC12** Method: **SW8081A**

MSD					Sample ID: 1709903-56A MSD			Units: µg/Kg		Analysis Date: 9/26/2017 02:18 AM		
Client ID: MA-DP-1 (0'-0.5') Grab					Run ID: GC12_170926A			SeqNo: 4660010		Prep Date: 9/21/2017		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	46.62	2.1	9.7	32.2	18.24	88.1	50-150	43.6	6.71	35		
4,4'-DDE	1062	1.9	9.7	32.2	1013	155	50-150	1101	3.54	35	SEO	
4,4'-DDT	319.9	1.5	9.7	32.2	309.5	32.3	50-150	349	8.69	35	SEO	
Aldrin	21.22	1.9	9.7	32.2	0	65.9	50-150	19.4	8.98	35		
alpha-BHC	23.53	1.9	9.7	32.2	0	73.1	50-150	21.9	7.18	35		
alpha-Chlordane	21.35	1.8	9.7	32.2	0	66.3	50-150	19.97	6.64	35		
beta-BHC	19.61	1.8	9.7	32.2	0	60.9	50-150	18.69	4.83	35		
delta-BHC	22.03	5	9.7	32.2	0	68.4	50-150	21.13	4.17	35		
Dieldrin	39.03	1.8	9.7	32.2	18.16	64.8	50-150	43.95	11.9	35		
Endosulfan I	22.92	1.6	9.7	32.2	0.3251	70.2	50-150	21.32	7.25	35		
Endosulfan II	23.53	1.8	9.7	32.2	0	73.1	50-150	22.66	3.79	35		
Endosulfan sulfate	25.29	2	9.7	32.2	0	78.5	50-150	25.14	0.604	35		
Endrin	26.54	2	9.7	32.2	1.498	77.8	50-150	26.47	0.258	35		
Endrin aldehyde	19.51	1.7	9.7	32.2	0	60.6	50-150	18.92	3.08	35		
Endrin ketone	22.8	1.8	9.7	32.2	1.544	66	50-150	21.89	4.09	35		
gamma-BHC (Lindane)	22.24	2.3	9.7	32.2	0	69.1	50-150	20.58	7.76	35		
gamma-Chlordane	20.91	2.2	9.7	32.2	0	64.9	50-150	18.91	10	35		
Heptachlor	22.85	2.7	9.7	32.2	0	71	50-150	21.16	7.7	35		
Heptachlor epoxide	28.89	1.8	9.7	32.2	0	89.7	50-150	26.44	8.86	35		
Methoxychlor	21.87	1.7	9.7	32.2	0	67.9	50-150	21.67	0.893	35		
Surr: Decachlorobiphenyl	21.43	0	0	32.18	0	66.6	50-150	20.5	4.42	35		
Surr: Tetrachloro-m-xylene	21.7	0	0	32.18	0	67.4	50-150	20.42	6.07	35		

The following samples were analyzed in this batch:

1709903-32A	1709903-53A	1709903-54A
1709903-55A	1709903-56A	1709903-57A
1709903-58A	1709903-59A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107824**      Instrument ID **GC12**      Method: **SW8081A**

MBLK		Sample ID: <b>PBLKS1-107824-107824</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>9/25/2017 11:30 AM</b>		
Client ID:		Run ID: <b>GC12_170925A</b>				SeqNo: <b>4655936</b>			Prep Date: <b>9/22/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	2.2	10								
4,4'-DDE	U	1.9	10								
4,4'-DDT	U	1.6	10								
Aldrin	U	2	10								
alpha-BHC	U	2	10								
alpha-Chlordane	U	1.9	10								
beta-BHC	U	1.8	10								
Chlordane, Technical	U	9.9	25								
delta-BHC	U	5.2	10								
Dieldrin	U	1.9	10								
Endosulfan I	U	1.6	10								
Endosulfan II	U	1.9	10								
Endosulfan sulfate	U	2.1	10								
Endrin	U	2.1	10								
Endrin aldehyde	U	1.7	10								
Endrin ketone	U	1.9	10								
gamma-BHC (Lindane)	U	2.4	10								
gamma-Chlordane	U	2.3	10								
Heptachlor	U	2.8	10								
Heptachlor epoxide	U	1.8	10								
Methoxychlor	U	1.7	10								
Toxaphene	U	11	60								
Surr: Decachlorobiphenyl	28.54	0	0	33.3	0	85.7	50-150	0			
Surr: Tetrachloro-m-xylene	30.61	0	0	33.3	0	91.9	50-150	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107824**      Instrument ID **GC12**      Method: **SW8081A**

LCS					Sample ID: <b>PLCSS1-107824-107824</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/25/2017 11:43 AM</b>		
Client ID:					Run ID: <b>GC12_170925A</b>			SeqNo: <b>4655937</b>		Prep Date: <b>9/22/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	30.62	2.2	10	33.33	0	91.9	50-150	0				
4,4'-DDE	29.89	1.9	10	33.33	0	89.7	50-150	0				
4,4'-DDT	28.9	1.6	10	33.33	0	86.7	50-150	0				
Aldrin	30.3	2	10	33.33	0	90.9	50-150	0				
alpha-BHC	31.76	2	10	33.33	0	95.3	50-150	0				
alpha-Chlordane	29.66	1.9	10	33.33	0	89	50-150	0				
beta-BHC	29.28	1.8	10	33.33	0	87.8	50-150	0				
delta-BHC	31.88	5.2	10	33.33	0	95.7	50-150	0				
Dieldrin	30.29	1.9	10	33.33	0	90.9	50-150	0				
Endosulfan I	30.51	1.6	10	33.33	0	91.5	50-150	0				
Endosulfan II	30.1	1.9	10	33.33	0	90.3	50-150	0				
Endosulfan sulfate	28.38	2.1	10	33.33	0	85.1	50-150	0				
Endrin	33.15	2.1	10	33.33	0	99.5	50-150	0				
Endrin aldehyde	28.5	1.7	10	33.33	0	85.5	50-150	0				
Endrin ketone	29.47	1.9	10	33.33	0	88.4	50-150	0				
gamma-BHC (Lindane)	31.54	2.4	10	33.33	0	94.6	50-150	0				
gamma-Chlordane	30.23	2.3	10	33.33	0	90.7	50-150	0				
Heptachlor	30.62	2.8	10	33.33	0	91.9	50-150	0				
Heptachlor epoxide	30.09	1.8	10	33.33	0	90.3	50-150	0				
Methoxychlor	27.76	1.7	10	33.33	0	83.3	50-150	0				
Surr: Decachlorobiphenyl	26.62	0	0	33.3	0	79.9	50-150	0				
Surr: Tetrachloro-m-xylene	29.04	0	0	33.3	0	87.2	50-150	0				

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709903  
**Project:** Roxul Phase II

## QC BATCH REPORT

Batch ID: **107824**      Instrument ID **GC12**      Method: **SW8081A**

MS					Units: µg/Kg			Analysis Date: 9/25/2017 08:09 PM			
Sample ID: <b>1709903-21A MS</b>					Client ID: <b>MA-DP-6 (0.5'-1.0') Grab</b>			Run ID: <b>GC12_170926A</b>			SeqNo: <b>4658141</b>
								Prep Date: <b>9/22/2017</b>			DF: <b>5</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	503.8	11	49	32.58	489.7	43.2	50-150	0			SEO
4,4'-DDE	2569	9.4	49	32.58	2574	-15.4	50-150	0			SEO
4,4'-DDT	2001	7.8	49	32.58	1873	395	50-150	0			SEO
Aldrin	26.1	9.7	49	32.58	1.068	76.8	50-150	0			J
alpha-BHC	28.12	9.5	49	32.58	1.861	80.6	50-150	0			J
alpha-Chlordane	27.98	9.3	49	32.58	0	85.9	50-150	0			J
beta-BHC	33.44	9	49	32.58	14.94	56.8	50-150	0			J
delta-BHC	U	25	49	32.58	0	0	50-150	0			S
Dieldrin	769.9	9.3	49	32.58	691	242	50-150	0			SEO
Endosulfan I	34.32	7.9	49	32.58	5.932	87.1	50-150	0			J
Endosulfan II	28.38	9.3	49	32.58	6.029	68.6	50-150	0			J
Endosulfan sulfate	35.78	10	49	32.58	0	110	50-150	0			J
Endrin	155.5	10	49	32.58	106.7	150	50-150	0			
Endrin aldehyde	36.68	8.5	49	32.58	0	113	50-150	0			J
Endrin ketone	134.9	9.2	49	32.58	120.5	44.2	50-150	0			S
gamma-BHC (Lindane)	24.63	12	49	32.58	0	75.6	50-150	0			J
gamma-Chlordane	54.41	11	49	32.58	0	167	50-150	0			S
Heptachlor	27.84	14	49	32.58	0	85.4	50-150	0			J
Heptachlor epoxide	308.9	8.9	49	32.58	0	948	50-150	0			S
Methoxychlor	33.52	8.4	49	32.58	0	103	50-150	0			J
Surr: Decachlorobiphenyl	27.67	0	0	32.56	0	85	50-150	0			
Surr: Tetrachloro-m-xylene	24.08	0	0	32.56	0	74	50-150	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107824** Instrument ID **GC12** Method: **SW8081A**

MSD					Sample ID: 1709903-21A MSD			Units: µg/Kg		Analysis Date: 9/25/2017 08:23 PM		
Client ID: MA-DP-6 (0.5'-1.0') Grab				Run ID: GC12_170926A			SeqNo: 4658142		Prep Date: 9/22/2017		DF: 5	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	383.4	11	49	32.98	489.7	-322	50-150	503.8	27.1	35	SO	
4,4'-DDE	1946	9.5	49	32.98	2574	-1910	50-150	2569	27.6	35	SEO	
4,4'-DDT	1414	7.9	49	32.98	1873	-1390	50-150	2001	34.4	35	SEO	
Aldrin	25.98	9.8	49	32.98	1.068	75.5	50-150	26.1	0	35	J	
alpha-BHC	27.82	9.6	49	32.98	1.861	78.7	50-150	28.12	0	35	J	
alpha-Chlordane	27.7	9.4	49	32.98	0	84	50-150	27.98	0	35	J	
beta-BHC	35.69	9.1	49	32.98	14.94	62.9	50-150	33.44	0	35	J	
delta-BHC	U	26	49	32.98	0	0	50-150	21.22	0	35	S	
Dieldrin	595	9.5	49	32.98	691	-291	50-150	769.9	25.6	35	SEO	
Endosulfan I	31.59	8	49	32.98	5.932	77.8	50-150	34.32	0	35	J	
Endosulfan II	30.75	9.4	49	32.98	6.029	75	50-150	28.38	0	35	J	
Endosulfan sulfate	37.58	10	49	32.98	0	114	50-150	35.78	0	35	J	
Endrin	109	10	49	32.98	106.7	7	50-150	155.5	35.2	35	SR	
Endrin aldehyde	38.52	8.6	49	32.98	0	117	50-150	36.68	0	35	J	
Endrin ketone	119.3	9.3	49	32.98	120.5	-3.69	50-150	134.9	12.3	35	S	
gamma-BHC (Lindane)	25.56	12	49	32.98	0	77.5	50-150	24.63	0	35	J	
gamma-Chlordane	48.71	11	49	32.98	0	148	50-150	54.41	0	35	J	
Heptachlor	27.66	14	49	32.98	0	83.9	50-150	27.84	0	35	J	
Heptachlor epoxide	242.8	9.1	49	32.98	0	736	50-150	308.9	24	35	S	
Methoxychlor	33.79	8.5	49	32.98	0	102	50-150	33.52	0	35	J	
Surr: Decachlorobiphenyl	28	0	0	32.95	0	85	50-150	27.67	1.18	35		
Surr: Tetrachloro-m-xylene	24.1	0	0	32.95	0	73.1	50-150	24.08	0.0904	35		

The following samples were analyzed in this batch:

1709903-17A	1709903-18A	1709903-19A
1709903-20A	1709903-21A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107515** Instrument ID **ICPMS3** Method: **SW6020A**

<b>MBLK</b>		Sample ID: <b>MBLK-107515-107515</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/18/2017 05:09 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170918A</b>				SeqNo: <b>4644178</b>		Prep Date: <b>9/18/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.0051	0.004	0.25								J

<b>LCS</b>		Sample ID: <b>LCS-107515-107515</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/18/2017 05:10 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170918A</b>				SeqNo: <b>4644179</b>		Prep Date: <b>9/18/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.657	0.004	0.25	5	0	93.1	80-120	0			

<b>MS</b>		Sample ID: <b>1709463-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/18/2017 05:15 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170918A</b>				SeqNo: <b>4644182</b>		Prep Date: <b>9/18/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	7.642	0.0051	0.32	6.386	1.709	92.9	75-125	0			

<b>MSD</b>		Sample ID: <b>1709463-01AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/18/2017 05:16 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170918A</b>				SeqNo: <b>4644183</b>		Prep Date: <b>9/18/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	7.916	0.0051	0.32	6.427	1.709	96.6	75-125	7.642	3.51	20	

The following samples were analyzed in this batch:

1709903-01A 1709903-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **107739** Instrument ID **ICPMS3** Method: **SW6020A**

<b>MBLK</b>		Sample ID: <b>MBLK-107739-107739</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:02 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651771</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.0097	0.004	0.25								J

<b>LCS</b>		Sample ID: <b>LCS-107739-107739</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:04 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651772</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	4.506	0.004	0.25	5	0	90.1	80-120	0			

<b>MS</b>		Sample ID: <b>1709936-04AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:46 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651799</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	7.713	0.0058	0.36	7.257	0.653	97.3	75-125	0			

<b>MSD</b>		Sample ID: <b>1709936-04AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:48 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651800</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	7.625	0.0058	0.36	7.194	0.653	96.9	75-125	7.713	1.15	20	

The following samples were analyzed in this batch:

1709903-05A	1709903-06A	1709903-09A
1709903-10A	1709903-13A	1709903-14A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **R220597** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R220597</b>				Units: % of sample			Analysis Date: <b>9/21/2017 09:50 PM</b>		
Client ID:		Run ID: <b>MOIST_170921D</b>				SeqNo: <b>4652845</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.025	0.050								

<b>LCS</b>		Sample ID: <b>LCS-R220597</b>				Units: % of sample			Analysis Date: <b>9/21/2017 09:50 PM</b>		
Client ID:		Run ID: <b>MOIST_170921D</b>				SeqNo: <b>4652843</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0			

<b>DUP</b>		Sample ID: <b>1709903-02A DUP</b>				Units: % of sample			Analysis Date: <b>9/21/2017 09:50 PM</b>		
Client ID: <b>SB-28S (0.5'-1.0') Grab</b>		Run ID: <b>MOIST_170921D</b>				SeqNo: <b>4652824</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	24.27	0.025	0.050	0	0	0	0-0	24.79	2.12	5	

<b>DUP</b>		Sample ID: <b>1709903-04A DUP</b>				Units: % of sample			Analysis Date: <b>9/21/2017 09:50 PM</b>		
Client ID: <b>SB-28S2 (0.5'-1.0') Grab</b>		Run ID: <b>MOIST_170921D</b>				SeqNo: <b>4652827</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	24.59	0.025	0.050	0	0	0	0-0	24.75	0.649	5	

The following samples were analyzed in this batch:

1709903-01A	1709903-02A	1709903-03A
1709903-04A	1709903-05A	1709903-06A
1709903-07A	1709903-08A	1709903-09A
1709903-10A	1709903-11A	1709903-12A
1709903-13A	1709903-14A	1709903-15A
1709903-16A	1709903-17A	1709903-18A
1709903-19A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **R220641** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R220641</b>				Units: % of sample			Analysis Date: <b>9/22/2017 06:30 AM</b>		
Client ID:		Run ID: <b>MOIST_170922A</b>				SeqNo: <b>4653774</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.025	0.050								

<b>LCS</b>		Sample ID: <b>LCS-R220641</b>				Units: % of sample			Analysis Date: <b>9/22/2017 06:30 AM</b>		
Client ID:		Run ID: <b>MOIST_170922A</b>				SeqNo: <b>4653773</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0			

<b>DUP</b>		Sample ID: <b>1709903-29A DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2017 06:30 AM</b>		
Client ID: <b>MA-DP-4 (0.5'-1.0') Grab</b>		Run ID: <b>MOIST_170922A</b>				SeqNo: <b>4653761</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	23.19	0.025	0.050	0	0	0	0-0	22.7	2.14	5	

<b>DUP</b>		Sample ID: <b>1709903-34A DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2017 06:30 AM</b>		
Client ID: <b>MA-DP-11 (1.0'-1.5') Grab</b>		Run ID: <b>MOIST_170922A</b>				SeqNo: <b>4653767</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.89	0.025	0.050	0	0	0	0-0	21.62	1.24	5	

The following samples were analyzed in this batch:

1709903-20A	1709903-21A	1709903-22A
1709903-23A	1709903-24A	1709903-25A
1709903-26A	1709903-27A	1709903-28A
1709903-29A	1709903-30A	1709903-31A
1709903-32A	1709903-33A	1709903-34A
1709903-35A	1709903-36A	1709903-37A
1709903-38A	1709903-39A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709903  
 Project: Roxul Phase II

# QC BATCH REPORT

Batch ID: **R220642** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R220642</b>				Units: % of sample			Analysis Date: <b>9/22/2017 07:20 AM</b>		
Client ID:		Run ID: <b>MOIST_170922B</b>				SeqNo: <b>4653798</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.025	0.050								

<b>LCS</b>		Sample ID: <b>LCS-R220642</b>				Units: % of sample			Analysis Date: <b>9/22/2017 07:20 AM</b>		
Client ID:		Run ID: <b>MOIST_170922B</b>				SeqNo: <b>4653797</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0			

<b>DUP</b>		Sample ID: <b>1709903-42A DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2017 07:20 AM</b>		
Client ID: <b>MA-DP-3 (1.0'-1.5') Grab</b>		Run ID: <b>MOIST_170922B</b>				SeqNo: <b>4653777</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	22.11	0.025	0.050	0	0	0	0-0	22.06	0.226	5	

<b>DUP</b>		Sample ID: <b>1709903-41A DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2017 07:20 AM</b>		
Client ID: <b>MA-DP-3 (0.5'-1.0') Grab</b>		Run ID: <b>MOIST_170922B</b>				SeqNo: <b>4653796</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	22.8	0.025	0.050	0	0	0	0-0	22.76	0.176	5	

The following samples were analyzed in this batch:

1709903-40A	1709903-41A	1709903-42A
1709903-43A	1709903-44A	1709903-45A
1709903-46A	1709903-47A	1709903-48A
1709903-49A	1709903-50A	1709903-51A
1709903-52A	1709903-53A	1709903-54A
1709903-55A	1709903-56A	1709903-57A
1709903-58A	1709903-59A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



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## Chain of Custody Form

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☐ **ALS Environmental**  
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 Holland, Michigan 49424  
 (Tel) 616.399.6070  
 (Fax) 616.399.6185

ALS Project Manager:

ALS Work Order #:

1709903

Customer Information			Project Information						Parameter/Method Request for Analysis												
Purchase Order		Project Name	Rexul Phase II						A	LEAD VIA 602A											
Work Order		Project Number							B												
Company Name		Bill To Company	ERM						C												
Send Report To		Invoice Attn.	PAVE CONNELLY						D												
Address		Address	204 Chase Dr						E												
City/State/Zip		City/State/Zip	Hurricane WV						F												
Phone		Phone	304 2524777						G												
Fax		Fax							H												
e-Mail Address									I												
									J												
No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold			
1	SB-28S (0-0.5')	6	9/13/17	1705	S		1	/													
2	SB-28S (0.5'-1.0')	6	9/13/17	1708	S		1	/													
3	SB-28S2 (0-0.5')	6	9/13/17	1715	S		1	/										XX			
4	SB-28S2 (0.5'-1.0')	6	9/13/17	1718	S		1	/										XX			
5	SB-28E (0-0.5')	6	9/13/17	1728	S		1	/													
6	SB-28E (0.5'-1.0')	6	9/13/17	1731	S		1	/													
7	SB-28E2 (0-0.5')	6	9/13/17	1737	S		1	/										XX			
8	SB-28E2 (0.5'-1.0')	6	9/13/17	1740	S		1	/										XX			
9	SB-28W (0-0.5')	6	9/13/17	1745	S		1	/													
10	SB-28W (0.5'-1.0')	6	9/13/17	1748	S		1	/													
Sampler(s): Please Print & Sign			Shipment Method:			Turnaround Time in Business Days (BD):				Results Due Date:											
Ryan Brisley R/BZ			COURIER			<input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD															
Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:																
[Signature]	9/15/17	1417	[Signature]	46°																	
Relinquished by:	Date:	Time:	Received by:	Temp:																	
[Signature]	9/15/17	1529	[Signature]	ASL																	
Relinquished by:	Date:	Time:	Received by:	Temp:																	
[Signature]	9/15/17	1700	[Signature]	ASL																	
Relinquished by:	Date:	Time:	Received by (Laboratory):	Temp:																	
FED EX	9/16/17	0945	[Signature]	<60°																	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):																		

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

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(Fax) 616.399.6185

ALS Project Manager:

ALS Work Order #:

1709903

Customer Information			Project Information					Parameter/Method Request for Analysis												
Purchase Order		Project Name	Roxal Phase II					A	Lead VIA 6020 A											
Work Order		Project Number						B	pesticides VIA 3081 A											
Company Name		Bill To Company	ERM					C												
Send Report To		Invoice Attn.	Dave Connelly					D												
Address		Address	204 Chase Dr					E												
City/State/Zip		City/State/Zip	Hurricane, WV					F												
Phone		Phone	304 257 4227					G												
Fax		Fax						H												
e-Mail Address								I												
								J												
No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	SB-28 W2 (0-0.5')	G	9/13/17	1751	S		1	/										X		
2	SB-29 W2 (0.5-1.0')	G	9/13/17	1754	S		1	/										X		
3	SB-28 N (0-0.5')	G	9/13/17	1801	S		1	/												
4	SB-28 N (0.5-1.0')	G	9/13/17	1804	S		1	/												
5	SB-28 N2 (0-0.5')	G	9/13/17	1808	S		1	/										X		
6	SB-28 N2 (0.5-1.0')	G	9/13/17	1911	S		1	/										X		
7	SB-31 (2.5-3.0')	G	9/14/17	0835	S		1	/												
8	SB-31 (3.5-4.0')	G	9/14/17	0840	S		1	/												
9	SB-31 (4.5-5.0')	G	9/14/17	0845	S		1	/												
10	MA-DP-6 (0-0.5')	G	9/14/17	0912	S		1	/												

Sampler(s): Please Print & Sign			Shipment Method:		Turnaround Time in Business Days (BD):				Results Due Date:	
			COURIER		<input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD					

Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:
	9/15/17	1447		46°C	
Relinquished by:	Date:	Time:	Received by:	Temp:	
	9/15/17	1529		ALSZL	
Relinquished by:	Date:	Time:	Received by:	Temp:	
	9/15/17	1700		ALSHN	
Relinquished by:	Date:	Time:	Received by (Laboratory):	Temp:	
FED EX	9/16/17	0945		<6.0°C	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		

QC Package: (Check Box Below)

Level II: Standard QC ☒

Level III: Standard QC + Raw Data ☐

Level IV: SW846 Methods/CLP ☐

Other: \_\_\_\_\_

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

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ALS Project Manager:

ALS Work Order #: 1709903

Customer Information		Project Information		Parameter/Method Request for Analysis																
Purchase Order		Project Name	<u>Roxal Phase II</u>	A	<u>pesticides via 8081A</u>															
Work Order		Project Number		B																
Company Name		Bill To Company	<u>ERM</u>	C																
Send Report To		Invoice Attn.	<u>Dave Connelly</u>	D																
Address		Address	<u>204 Chase Dr</u>	E																
City/State/Zip		City/State/Zip	<u>Harricane, WV</u>	F																
Phone		Phone	<u>304 257 4777</u>	G																
Fax		Fax		H																
e-Mail Address	<u>david.connelly@erm.com</u>			I																
				J																

No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MA-DP-6 (0.5-1.0')	G	9/14/17	0915	S		1	/										
2	MA-DP-5 (0-0.5')	G	9/14/17	0928	S		1	/										
3	MA-DP-5 (0.5-1.0')	G	9/14/17	0931	S		1	/										
4	MA-DP-5 (1.0-1.5')	G	9/14/17	0934	S		1	/										
5	MA-DP-5 (2-2.5')	G	9/14/17	0937	S		1	/										
6	MA-DP-12 (0-0.5')	G	9/14/17	0955	S		1	/										
7	MA-DP-12 (0.5-1.0')	G	9/14/17	0958	S		1	/										
8	MA-DP-4 (0-0.5')	G	9/14/17	1005	S		1	/										
9	MA-DP-4 (0.5-1.0')	G	9/14/17	1008	S		1	/										
10	MA-DP-4 (1.0-1.5')	G	9/14/17	1011	S		1	/										

Sampler(s): Please Print & Sign	Shipment Method: <u>COURIER</u>	Turnaround Time in Business Days (BD): <input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD	Results Due Date:
---------------------------------	---------------------------------	--	-------------------

Relinquished by: <u>[Signature]</u>	Date: <u>9/15/17</u>	Time: <u>1447</u>	Received by: <u>[Signature]</u>	Temp: <u>46°C</u>	Notes: <u>* - HOLD but perform extraction for analysis</u>
Relinquished by: <u>[Signature]</u>	Date: <u>9/15/17</u>	Time: <u>1529</u>	Received by: <u>[Signature]</u>	Temp: <u>ALS</u>	
Relinquished by: <u>[Signature]</u>	Date: <u>9/15/17</u>	Time: <u>1700</u>	Received by: <u>FED EX</u>	Temp: <u>15HN</u>	QC Package: (Check Box Below)
Relinquished by: <u>FED EX</u>	Date: <u>9/16/17</u>	Time: <u>0945</u>	Received by: <u>[Signature]</u>	Temp: <u>16.0</u>	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		Level II: Standard QC <input checked="" type="checkbox"/>
					Level III: Standard QC + Raw Data <input type="checkbox"/>
					Level IV: SW846 Methods/CLP <input type="checkbox"/>

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

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ALS Project Manager:

ALS Work Order #: 1709903

Customer Information			Project Information						Parameter/Method Request for Analysis												
Purchase Order			Project Name	ROXU Phase II				A	Pesticides via GORLA												
Work Order			Project Number					B													
Company Name			Bill To Company	ERM				C													
Send Report To			Invoice Attn.	Dave Connolly				D													
Address			Address	204 Chase Dr				E													
City/State/Zip			City/State/Zip	Hurricane, WV				F													
Phone			Phone	304 257 4777				G													
Fax			Fax					H													
e-Mail Address								I													
								J													
No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold			
1	MA-DP-4 (2.0-2.5')	G	9/14/17	1014	S		1	/										*			
2	MA-DP-11 (0-0.5')	G	9/14/17	1030	S		1	/										*			
3	MA-DP-11 (0.5-1.0')	G	9/14/17	1033	S		1	/										*			
4	MA-DP-11 (1.0-1.5')	G	9/14/17	1036	S		1	/										*			
5	MA-DP-11 (1.5-2.0')	G	9/14/17	1039	S		1	/										*			
6	MA-DP-10 (0-0.5')	G	9/14/17	1055	S		1	/										*			
7	MA-DP-10 (0.5-1.0')	G	9/14/17	1058	S		1	/										*			
8	MA-DP-10 (1.0-1.5')	G	9/14/17	1101	S		1	/										*			
9	MA-DP-10 (1.5-2.0')	G	9/14/17	1104	S		1	/										*			
10	MA-DP-3 (0-0.5')	G	9/14/17	1122	S		1	/										*			

Sampler(s): Please Print & Sign  
**RYAN BAISDEE**

Shipment Method: **COURIER**

Turnaround Time in Business Days (BD): ☒ 10 BD (STD) ☐ 5 BD ☐ 3 BD ☐ 2 BD ☐ 1 BD

Results Due Date:

Relinquished by: **[Signature]** Date: **9/15/17** Time: **1447**

Relinquished by: **[Signature]** Date: **9/15/17** Time: **1529**

Relinquished by: **[Signature]** Date: **9/15/17** Time: **1702**

Relinquished by: **FED EX** Date: **9/16/17** Time: **0945**

Received by: **[Signature]**

Received by: **[Signature]**

Received by: **FED EX**

Received by (Laboratory): **[Signature]**

Temp: **46°C**

Temp: **ASCL**

Temp: **ALSHN**

Temp: **26.0°C**

Notes: **\* - HOLD but perform extraction for analyses**

QC Package: (Check Box Below)

Level II: Standard QC ☒

Level III: Standard QC + Raw Data ☐

Level IV: SW846 Methods/CLP ☐

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

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South Charleston, WV 25303  
(Tel) 304.356.3168  
(Fax) 304.205.6262

## Chain of Custody Form

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☐ ALS Environmental  
3352 128th Avenue  
Holland, Michigan 49424  
(Tel) 616.399.6070  
(Fax) 616.399.6185

ALS Project Manager:

ALS Work Order #: 1709903

Customer Information		Project Information		Parameter/Method Request for Analysis																
Purchase Order		Project Name	<u>Roxal Phase II</u>	A	<u>Pesticides VIA 8081A</u>															
Work Order		Project Number		B																
Company Name		Bill To Company	<u>ERM</u>	C																
Send Report To		Invoice Attn.	<u>Dave Connolly</u>	D																
Address		Address	<u>204 Chase Dr</u>	E																
City/State/Zip		City/State/Zip	<u>Hurricane, WV</u>	F																
Phone		Phone	<u>304 757 4777</u>	G																
Fax		Fax		H																
e-Mail Address				I																
				J																

No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	#Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MA-DP-3 (0.5-1.0')	G	9/14/17	1125	S		1	/										
2	MA-DP-3 (1.0-1.5')	G	9/14/17	1128	S		1	/										
3	MA-DP-3 (2.0-2.5')	G	9/14/17	1131	S		1	/										
4	MA-DP-9 (0-0.5')	G	9/14/17	1145	S		1	/										
5	MA-DP-9 (0.5-1.0')	G	9/14/17	1148	S		1	/										
6	MA-DP-9 (1.0-1.5')	G	9/14/17	1151	S		1	/										
7	MA-DP-9 (1.5-2.0')	G	9/14/17	1154	S		1	/										
8	MA-DP-2 (0-0.5')	G	9/14/17	1220	S		1	/										
9	MA-DP-2 (0.5-1.0')	G	9/14/17	1223	S		1	/										
10	MA-DP-2 (1.0-1.5')	G	9/14/17	1226	S		1	/										

Sampler(s): Please Print & Sign <u>Ryan Baedert</u>		Shipment Method: <u>Courier</u>	Turnaround Time in Business Days (BD): <input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD	Results Due Date:
--	--	------------------------------------	--	-------------------

Relinquished by: <u>[Signature]</u>	Date: <u>9/15/17</u>	Time: <u>1447</u>	Received by: <u>[Signature]</u>	Temp: <u>46°C</u>	Notes: <u>* - Hold but perform extraction for Analyses</u>
Relinquished by: <u>[Signature]</u>	Date: <u>9/15/17</u>	Time: <u>1529</u>	Received by: <u>[Signature]</u>	Temp: <u>46°C</u>	
Relinquished by: <u>[Signature]</u>	Date: <u>9/15/17</u>	Time: <u>1700</u>	Received by: <u>[Signature]</u>	Temp: <u>46°C</u>	QC Package: (Check Box Below)
Relinquished by: <u>FED EX</u>	Date: <u>9/16/17</u>	Time: <u>0945</u>	Received by (Laboratory): <u>[Signature]</u>	Temp: <u>46°C</u>	Level II: Standard QC <input checked="" type="checkbox"/>
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):		Level III: Standard QC + Raw Data <input type="checkbox"/>
					Level IV: SW846 Methods/CLP <input type="checkbox"/>
					Other: <input type="checkbox"/>

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

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 (Tel) 304.356.3168  
 (Fax) 304.205.6262

# Chain of Custody Form

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☐ **ALS Environmental**  
 3352 128th Avenue  
 Holland, Michigan 49424  
 (Tel) 616.399.6070  
 (Fax) 616.399.6185

ALS Project Manager:

ALS Work Order #:

1709903

Customer Information		Project Information		Parameter/Method Request for Analysis																
Purchase Order		Project Name	Roxul Phase II	A	Pesticides 8081A															
Work Order		Project Number		B	Lead and Arsenic VIA 6020A															
Company Name		Bill To Company	ERM	C																
Send Report To		Invoice Attn.	DAVE CONNELLY	D																
Address		Address	204 Chase Dr	E																
City/State/Zip		City/State/Zip	Hurricane WV	F																
Phone		Phone	304.757.4777	G																
Fax		Fax		H																
e-Mail Address				I																
				J																

No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MA-DP-2 (2.0'-2.5')	G	9/14/17	1228	S		1	/										*
2	MA-DP-8 (0'-0.5')	G	9/14/17	1238	S		1	/										
3	MA-DP-8 (0.5'-1.0')	G	9/14/17	1241	S		1	/										
4	MA-DP-8 (1.0'-1.5')	G	9/14/17	1244	S		1	/										*
5	MA-DP-8 (1.5'-2.0')	G	9/14/17	1247	S		1	/										*
6	MA-DP-1 (0'-0.5')	G	9/14/17	1300	S		1	/										
7	MA-DP-1 (0.5'-1.0')	G	9/14/17	1303	S		1	/										
8	MA-DP-1 (1.0'-1.5')	G	9/14/17	1306	S		1	/										*
9	MA-DP-1 (2.0'-2.5')	G	9/14/17	1309	S		1	/										*
10	SED 2 (0'-0.5')	G	9/14/17	1413	S		1	/										

Sampler(s): Please Print & Sign <i>Ryan Barber</i>		Shipment Method: COURIER		Turnaround Time in Business Days (BD): <input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD				Results Due Date:		
Relinquished by: <i>[Signature]</i>	Date: 9/15/17	Time: 1447	Received by: <i>[Signature]</i>	Temp: 46° ASAC	Notes: * Hold but perform extraction for analysis					
Relinquished by: <i>[Signature]</i>	Date: 9/15/17	Time: 1529	Received by: <i>[Signature]</i>	Temp: ALSHW 16.0°						
Relinquished by: <i>[Signature]</i>	Date: 9/16/17	Time: 1706	Received by: FED EX	Temp:	QC Package: (Check Box Below)					
Relinquished by: FED EX	Date: 9/16/17	Time: 0945	Received by (Laboratory): <i>[Signature]</i>	Temp:	Level II: Standard QC					X
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	Temp:	Level III: Standard QC + Raw Data					
					Level IV: SW846 Methods/CLP					
					Other:					

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>5</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

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Sample Receipt Checklist

Client Name: **ERM-HURRICANE**

Date/Time Received: **15-Sep-17 15:29**

Work Order: **1709903**

Received by: **JAS**

Checklist completed by <u>Janet Smith</u>	18-Sep-17	Reviewed by: <u>Rebecca Kiser</u>	18-Sep-17
<small>eSignature</small>	<small>Date</small>	<small>eSignature</small>	<small>Date</small>

Matrices: Soil

Carrier name: Courier

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>	
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Temperature(s)/Thermometer(s):	<u>&lt;6C</u> <u>IR</u>			
Cooler(s)/Kit(s):	<div style="border: 1px solid black; height: 15px;"></div>			
Date/Time sample(s) sent to storage:	<div style="border: 1px solid black; height: 15px;"></div>			
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
pH adjusted by:	<div style="border: 1px solid black; height: 15px;"></div>			

Login Notes: One cooler received with handle missing. Holland <6.0 c

-----

Client Contacted: \_\_\_\_\_ Date Contacted: \_\_\_\_\_ Person Contacted: \_\_\_\_\_

Contacted By: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments:

CorrectiveAction:



27-Sep-2017

David Connelly  
ERM, Inc  
204 Chase Drive  
Hurricane, WV 25526

Re: **Roxul Phase II Sediment**

Work Order: **1709908**

Dear David,

ALS Environmental received 6 samples on 15-Sep-2017 03:29 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Kiser".

Electronically approved by: Rebecca Kiser

Rebecca Kiser  
Project Manager

Certificate No: WV: 355

### Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

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RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Work Order:** 1709908

---

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1709908-01	SED-2 (0.5'-1.0') Grab	Sediment		9/14/2017 14:16	9/16/2017 09:45	<input type="checkbox"/>
1709908-02	SED-3 (0'-0.5') Grab	Sediment		9/14/2017 14:25	9/16/2017 09:45	<input type="checkbox"/>
1709908-03	SED-3 (0.5'-1.0') Grab	Sediment		9/14/2017 14:28	9/16/2017 09:45	<input type="checkbox"/>
1709908-04	SED-4 (0'-0.5') Grab	Sediment		9/14/2017 14:38	9/16/2017 09:45	<input type="checkbox"/>
1709908-05	SED-4 (0.5'-1.0') Grab	Sediment		9/14/2017 14:41	9/16/2017 09:45	<input type="checkbox"/>
1709908-06	SED-2 (0'-0.5') Grab	Sediment		9/14/2017 14:13	9/16/2017 09:45	<input type="checkbox"/>

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**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Work Order:** 1709908

---

**Case Narrative****QC Comments:**

Batch 107739, Method ICP\_6020WV\_S, Sample 1709908-05A: The reporting limits are elevated due to internal standard failure in the undiluted run for these analytes: As

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**WorkOrder:** 1709908

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight

# ALS Group, USA

Date: 27-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Sample ID:** SED-2 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 02:16 PM

**Work Order:** 1709908  
**Lab ID:** 1709908-01  
**Matrix:** SEDIMENT

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.8	13	µg/Kg-dry	1	9/26/2017 17:41
4,4'-DDE	U		2.5	13	µg/Kg-dry	1	9/26/2017 17:41
4,4'-DDT	U		2.0	13	µg/Kg-dry	1	9/26/2017 17:41
Aldrin	U		2.6	13	µg/Kg-dry	1	9/26/2017 17:41
alpha-BHC	U		2.5	13	µg/Kg-dry	1	9/26/2017 17:41
alpha-Chlordane	U		2.4	13	µg/Kg-dry	1	9/26/2017 17:41
beta-BHC	U		2.4	13	µg/Kg-dry	1	9/26/2017 17:41
Chlordane, Technical	U		13	32	µg/Kg-dry	1	9/26/2017 17:41
delta-BHC	U		6.7	13	µg/Kg-dry	1	9/26/2017 17:41
Dieldrin	U		2.5	13	µg/Kg-dry	1	9/26/2017 17:41
Endosulfan I	U		2.1	13	µg/Kg-dry	1	9/26/2017 17:41
Endosulfan II	U		2.4	13	µg/Kg-dry	1	9/26/2017 17:41
Endosulfan sulfate	U		2.7	13	µg/Kg-dry	1	9/26/2017 17:41
Endrin	U		2.7	13	µg/Kg-dry	1	9/26/2017 17:41
Endrin aldehyde	U		2.2	13	µg/Kg-dry	1	9/26/2017 17:41
Endrin ketone	U		2.4	13	µg/Kg-dry	1	9/26/2017 17:41
gamma-BHC (Lindane)	U		3.1	13	µg/Kg-dry	1	9/26/2017 17:41
gamma-Chlordane	U		2.9	13	µg/Kg-dry	1	9/26/2017 17:41
Heptachlor	U		3.6	13	µg/Kg-dry	1	9/26/2017 17:41
Heptachlor epoxide	U		2.4	13	µg/Kg-dry	1	9/26/2017 17:41
Methoxychlor	U		2.2	13	µg/Kg-dry	1	9/26/2017 17:41
Toxaphene	U		14	77	µg/Kg-dry	1	9/26/2017 17:41
Surr: Decachlorobiphenyl	79.9			50-150	%REC	1	9/26/2017 17:41
Surr: Tetrachloro-m-xylene	101			50-150	%REC	1	9/26/2017 17:41
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: <b>JF</b>
Arsenic	7.1		0.066	0.44	mg/Kg-dry	1	9/21/2017 18:23
Lead	17		0.0071	0.44	mg/Kg-dry	1	9/21/2017 18:23
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	24		0.025	0.050	% of sample	1	9/22/2017 23:00

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 27-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Sample ID:** SED-3 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 02:25 PM

**Work Order:** 1709908  
**Lab ID:** 1709908-02  
**Matrix:** SEDIMENT

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	6.5	J	3.1	14	µg/Kg-dry	1	9/26/2017 17:55
4,4'-DDE	30		2.7	14	µg/Kg-dry	1	9/26/2017 17:55
4,4'-DDT	U		2.2	14	µg/Kg-dry	1	9/26/2017 17:55
Aldrin	U		2.8	14	µg/Kg-dry	1	9/26/2017 17:55
alpha-BHC	U		2.8	14	µg/Kg-dry	1	9/26/2017 17:55
alpha-Chlordane	U		2.7	14	µg/Kg-dry	1	9/26/2017 17:55
beta-BHC	U		2.6	14	µg/Kg-dry	1	9/26/2017 17:55
Chlordane, Technical	U		14	35	µg/Kg-dry	1	9/26/2017 17:55
delta-BHC	U		7.3	14	µg/Kg-dry	1	9/26/2017 17:55
Dieldrin	U		2.7	14	µg/Kg-dry	1	9/26/2017 17:55
Endosulfan I	U		2.3	14	µg/Kg-dry	1	9/26/2017 17:55
Endosulfan II	U		2.7	14	µg/Kg-dry	1	9/26/2017 17:55
Endosulfan sulfate	U		2.9	14	µg/Kg-dry	1	9/26/2017 17:55
Endrin	U		2.9	14	µg/Kg-dry	1	9/26/2017 17:55
Endrin aldehyde	U		2.4	14	µg/Kg-dry	1	9/26/2017 17:55
Endrin ketone	U		2.7	14	µg/Kg-dry	1	9/26/2017 17:55
gamma-BHC (Lindane)	U		3.4	14	µg/Kg-dry	1	9/26/2017 17:55
gamma-Chlordane	U		3.2	14	µg/Kg-dry	1	9/26/2017 17:55
Heptachlor	U		4.0	14	µg/Kg-dry	1	9/26/2017 17:55
Heptachlor epoxide	U		2.6	14	µg/Kg-dry	1	9/26/2017 17:55
Methoxychlor	U		2.4	14	µg/Kg-dry	1	9/26/2017 17:55
Toxaphene	U		15	85	µg/Kg-dry	1	9/26/2017 17:55
Surr: Decachlorobiphenyl	71.1			50-150	%REC	1	9/26/2017 17:55
Surr: Tetrachloro-m-xylene	86.7			50-150	%REC	1	9/26/2017 17:55
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: <b>JF</b>
Arsenic	6.7		0.081	0.55	mg/Kg-dry	1	9/21/2017 18:24
Lead	22		0.0088	0.55	mg/Kg-dry	1	9/21/2017 18:24
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	31		0.025	0.050	% of sample	1	9/22/2017 23:00

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 27-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Sample ID:** SED-3 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 02:28 PM

**Work Order:** 1709908  
**Lab ID:** 1709908-03  
**Matrix:** SEDIMENT

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.7	12	µg/Kg-dry	1	9/26/2017 18:09
4,4'-DDE	U		2.4	12	µg/Kg-dry	1	9/26/2017 18:09
4,4'-DDT	U		2.0	12	µg/Kg-dry	1	9/26/2017 18:09
Aldrin	U		2.5	12	µg/Kg-dry	1	9/26/2017 18:09
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/26/2017 18:09
alpha-Chlordane	U		2.4	12	µg/Kg-dry	1	9/26/2017 18:09
beta-BHC	U		2.3	12	µg/Kg-dry	1	9/26/2017 18:09
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/26/2017 18:09
delta-BHC	U		6.5	12	µg/Kg-dry	1	9/26/2017 18:09
Dieldrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 18:09
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/26/2017 18:09
Endosulfan II	U		2.4	12	µg/Kg-dry	1	9/26/2017 18:09
Endosulfan sulfate	U		2.6	12	µg/Kg-dry	1	9/26/2017 18:09
Endrin	U		2.6	12	µg/Kg-dry	1	9/26/2017 18:09
Endrin aldehyde	U		2.2	12	µg/Kg-dry	1	9/26/2017 18:09
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/26/2017 18:09
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/26/2017 18:09
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/26/2017 18:09
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/26/2017 18:09
Heptachlor epoxide	U		2.3	12	µg/Kg-dry	1	9/26/2017 18:09
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/26/2017 18:09
Toxaphene	U		13	75	µg/Kg-dry	1	9/26/2017 18:09
Surr: Decachlorobiphenyl	76.8			50-150	%REC	1	9/26/2017 18:09
Surr: Tetrachloro-m-xylene	86.6			50-150	%REC	1	9/26/2017 18:09
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: <b>JF</b>
Arsenic	7.8		0.071	0.48	mg/Kg-dry	1	9/21/2017 18:26
Lead	19		0.0076	0.48	mg/Kg-dry	1	9/21/2017 18:26
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>NW</b>
Moisture	21		0.025	0.050	% of sample	1	9/22/2017 23:00

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 27-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Sample ID:** SED-4 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 02:38 PM

**Work Order:** 1709908  
**Lab ID:** 1709908-04  
**Matrix:** SEDIMENT

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		3.1	14	µg/Kg-dry	1	9/26/2017 18:52
<b>4,4'-DDE</b>	<b>24</b>		<b>2.7</b>	<b>14</b>	<b>µg/Kg-dry</b>	1	9/26/2017 18:52
4,4'-DDT	U		2.2	14	µg/Kg-dry	1	9/26/2017 18:52
Aldrin	U		2.8	14	µg/Kg-dry	1	9/26/2017 18:52
alpha-BHC	U		2.7	14	µg/Kg-dry	1	9/26/2017 18:52
alpha-Chlordane	U		2.7	14	µg/Kg-dry	1	9/26/2017 18:52
beta-BHC	U		2.6	14	µg/Kg-dry	1	9/26/2017 18:52
Chlordane, Technical	U		14	35	µg/Kg-dry	1	9/26/2017 18:52
delta-BHC	U		7.3	14	µg/Kg-dry	1	9/26/2017 18:52
Dieldrin	U		2.7	14	µg/Kg-dry	1	9/26/2017 18:52
Endosulfan I	U		2.3	14	µg/Kg-dry	1	9/26/2017 18:52
Endosulfan II	U		2.7	14	µg/Kg-dry	1	9/26/2017 18:52
Endosulfan sulfate	U		2.9	14	µg/Kg-dry	1	9/26/2017 18:52
Endrin	U		2.9	14	µg/Kg-dry	1	9/26/2017 18:52
Endrin aldehyde	U		2.4	14	µg/Kg-dry	1	9/26/2017 18:52
Endrin ketone	U		2.6	14	µg/Kg-dry	1	9/26/2017 18:52
gamma-BHC (Lindane)	U		3.4	14	µg/Kg-dry	1	9/26/2017 18:52
gamma-Chlordane	U		3.2	14	µg/Kg-dry	1	9/26/2017 18:52
Heptachlor	U		4.0	14	µg/Kg-dry	1	9/26/2017 18:52
Heptachlor epoxide	U		2.6	14	µg/Kg-dry	1	9/26/2017 18:52
Methoxychlor	U		2.4	14	µg/Kg-dry	1	9/26/2017 18:52
Toxaphene	U		15	84	µg/Kg-dry	1	9/26/2017 18:52
Surr: Decachlorobiphenyl	58.0			50-150	%REC	1	9/26/2017 18:52
Surr: Tetrachloro-m-xylene	81.0			50-150	%REC	1	9/26/2017 18:52
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: <b>JF</b>
<b>Arsenic</b>	<b>8.3</b>		<b>0.069</b>	<b>0.46</b>	<b>mg/Kg-dry</b>	1	9/21/2017 18:27
<b>Lead</b>	<b>25</b>		<b>0.0074</b>	<b>0.46</b>	<b>mg/Kg-dry</b>	1	9/21/2017 18:27
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>BTG</b>
<b>Moisture</b>	<b>32</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	9/24/2017 14:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group, USA

Date: 27-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Sample ID:** SED-4 (0.5'-1.0') Grab  
**Collection Date:** 9/14/2017 02:41 PM

**Work Order:** 1709908  
**Lab ID:** 1709908-05  
**Matrix:** SEDIMENT

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	U		2.7	12	µg/Kg-dry	1	9/26/2017 19:07
4,4'-DDE	U		2.4	12	µg/Kg-dry	1	9/26/2017 19:07
4,4'-DDT	U		2.0	12	µg/Kg-dry	1	9/26/2017 19:07
Aldrin	U		2.5	12	µg/Kg-dry	1	9/26/2017 19:07
alpha-BHC	U		2.4	12	µg/Kg-dry	1	9/26/2017 19:07
alpha-Chlordane	U		2.3	12	µg/Kg-dry	1	9/26/2017 19:07
beta-BHC	U		2.3	12	µg/Kg-dry	1	9/26/2017 19:07
Chlordane, Technical	U		12	31	µg/Kg-dry	1	9/26/2017 19:07
delta-BHC	U		6.4	12	µg/Kg-dry	1	9/26/2017 19:07
Dieldrin	U		2.4	12	µg/Kg-dry	1	9/26/2017 19:07
Endosulfan I	U		2.0	12	µg/Kg-dry	1	9/26/2017 19:07
Endosulfan II	U		2.3	12	µg/Kg-dry	1	9/26/2017 19:07
Endosulfan sulfate	U		2.6	12	µg/Kg-dry	1	9/26/2017 19:07
Endrin	U		2.5	12	µg/Kg-dry	1	9/26/2017 19:07
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	9/26/2017 19:07
Endrin ketone	U		2.3	12	µg/Kg-dry	1	9/26/2017 19:07
gamma-BHC (Lindane)	U		3.0	12	µg/Kg-dry	1	9/26/2017 19:07
gamma-Chlordane	U		2.8	12	µg/Kg-dry	1	9/26/2017 19:07
Heptachlor	U		3.5	12	µg/Kg-dry	1	9/26/2017 19:07
Heptachlor epoxide	U		2.3	12	µg/Kg-dry	1	9/26/2017 19:07
Methoxychlor	U		2.1	12	µg/Kg-dry	1	9/26/2017 19:07
Toxaphene	U		13	74	µg/Kg-dry	1	9/26/2017 19:07
Surr: Decachlorobiphenyl	83.3			50-150	%REC	1	9/26/2017 19:07
Surr: Tetrachloro-m-xylene	100			50-150	%REC	1	9/26/2017 19:07
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: <b>JF</b>
Arsenic	15		0.30	2.0	mg/Kg-dry	5	9/22/2017 12:13
Lead	14		0.0065	0.40	mg/Kg-dry	1	9/21/2017 18:37
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>BTG</b>
Moisture	22		0.025	0.050	% of sample	1	9/24/2017 14:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 27-Sep-17

**Client:** ERM, Inc  
**Project:** Roxul Phase II Sediment  
**Sample ID:** SED-2 (0'-0.5') Grab  
**Collection Date:** 9/14/2017 02:13 PM

**Work Order:** 1709908  
**Lab ID:** 1709908-06  
**Matrix:** SEDIMENT

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 9/21/17		Analyst: <b>EB</b>
4,4'-DDD	7.1	J	3.7	17	µg/Kg-dry	1	9/26/2017 19:21
4,4'-DDE	60		3.2	17	µg/Kg-dry	1	9/26/2017 19:21
4,4'-DDT	U		2.7	17	µg/Kg-dry	1	9/26/2017 19:21
Aldrin	U		3.3	17	µg/Kg-dry	1	9/26/2017 19:21
alpha-BHC	U		3.3	17	µg/Kg-dry	1	9/26/2017 19:21
alpha-Chlordane	U		3.2	17	µg/Kg-dry	1	9/26/2017 19:21
beta-BHC	U		3.1	17	µg/Kg-dry	1	9/26/2017 19:21
Chlordane, Technical	U		17	42	µg/Kg-dry	1	9/26/2017 19:21
delta-BHC	U		8.7	17	µg/Kg-dry	1	9/26/2017 19:21
Dieldrin	U		3.2	17	µg/Kg-dry	1	9/26/2017 19:21
Endosulfan I	U		2.7	17	µg/Kg-dry	1	9/26/2017 19:21
Endosulfan II	U		3.2	17	µg/Kg-dry	1	9/26/2017 19:21
Endosulfan sulfate	U		3.5	17	µg/Kg-dry	1	9/26/2017 19:21
Endrin	U		3.5	17	µg/Kg-dry	1	9/26/2017 19:21
Endrin aldehyde	U		2.9	17	µg/Kg-dry	1	9/26/2017 19:21
Endrin ketone	U		3.2	17	µg/Kg-dry	1	9/26/2017 19:21
gamma-BHC (Lindane)	U		4.0	17	µg/Kg-dry	1	9/26/2017 19:21
gamma-Chlordane	U		3.8	17	µg/Kg-dry	1	9/26/2017 19:21
Heptachlor	U		4.7	17	µg/Kg-dry	1	9/26/2017 19:21
Heptachlor epoxide	U		3.1	17	µg/Kg-dry	1	9/26/2017 19:21
Methoxychlor	U		2.9	17	µg/Kg-dry	1	9/26/2017 19:21
Toxaphene	U		18	100	µg/Kg-dry	1	9/26/2017 19:21
Surr: Decachlorobiphenyl	51.5			50-150	%REC	1	9/26/2017 19:21
Surr: Tetrachloro-m-xylene	82.4			50-150	%REC	1	9/26/2017 19:21
<b>METALS BY ICP-MS</b>							
			Method:SW6020A		Prep: SW3050B / 9/21/17		Analyst: <b>JF</b>
Arsenic	9.1		0.10	0.68	mg/Kg-dry	1	9/21/2017 18:38
Lead	24		0.011	0.68	mg/Kg-dry	1	9/21/2017 18:38
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: <b>BTG</b>
Moisture	42		0.025	0.050	% of sample	1	9/24/2017 14:15

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Client: ERM, Inc  
 Work Order: 1709908  
 Project: Roxul Phase II Sediment

## QC BATCH REPORT

Batch ID: **107721** Instrument ID **GC12** Method: **SW8081A**

MBLK		Sample ID: <b>PBLKS1-107721-107721</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>9/25/2017 11:04 AM</b>			
Client ID:		Run ID: <b>GC12_170925A</b>				SeqNo: <b>4655934</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	2.2	10								
4,4'-DDE	U	1.9	10								
4,4'-DDT	U	1.6	10								
Aldrin	U	2	10								
alpha-BHC	U	2	10								
alpha-Chlordane	U	1.9	10								
beta-BHC	U	1.8	10								
Chlordane, Technical	U	9.9	25								
delta-BHC	U	5.2	10								
Dieldrin	U	1.9	10								
Endosulfan I	U	1.6	10								
Endosulfan II	U	1.9	10								
Endosulfan sulfate	U	2.1	10								
Endrin	U	2.1	10								
Endrin aldehyde	U	1.7	10								
Endrin ketone	U	1.9	10								
gamma-BHC (Lindane)	U	2.4	10								
gamma-Chlordane	U	2.3	10								
Heptachlor	U	2.8	10								
Heptachlor epoxide	U	1.8	10								
Methoxychlor	U	1.7	10								
Toxaphene	U	11	60								
Surr: Decachlorobiphenyl	29.26	0	0	33.3	0	87.9	50-150	0			
Surr: Tetrachloro-m-xylene	31.25	0	0	33.3	0	93.8	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709908  
**Project:** Roxul Phase II Sediment

## QC BATCH REPORT

Batch ID: **107721**      Instrument ID **GC12**      Method: **SW8081A**

LCS					Sample ID: <b>PLCSS1-107721-107721</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/25/2017 11:17 AM</b>		
Client ID:					Run ID: <b>GC12_170925A</b>			SeqNo: <b>4655935</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	32.19	2.2	10	33.33	0	96.6	50-150	0				
4,4'-DDE	31.37	1.9	10	33.33	0	94.1	50-150	0				
4,4'-DDT	28.4	1.6	10	33.33	0	85.2	50-150	0				
Aldrin	31.78	2	10	33.33	0	95.4	50-150	0				
alpha-BHC	32.96	2	10	33.33	0	98.9	50-150	0				
alpha-Chlordane	31.09	1.9	10	33.33	0	93.3	50-150	0				
beta-BHC	30.34	1.8	10	33.33	0	91	50-150	0				
delta-BHC	32.63	5.2	10	33.33	0	97.9	50-150	0				
Dieldrin	31.66	1.9	10	33.33	0	95	50-150	0				
Endosulfan I	31.87	1.6	10	33.33	0	95.6	50-150	0				
Endosulfan II	31.21	1.9	10	33.33	0	93.6	50-150	0				
Endosulfan sulfate	29.3	2.1	10	33.33	0	87.9	50-150	0				
Endrin	31.47	2.1	10	33.33	0	94.4	50-150	0				
Endrin aldehyde	30.36	1.7	10	33.33	0	91.1	50-150	0				
Endrin ketone	31.09	1.9	10	33.33	0	93.3	50-150	0				
gamma-BHC (Lindane)	32.64	2.4	10	33.33	0	97.9	50-150	0				
gamma-Chlordane	31.7	2.3	10	33.33	0	95.1	50-150	0				
Heptachlor	30.58	2.8	10	33.33	0	91.7	50-150	0				
Heptachlor epoxide	31.37	1.8	10	33.33	0	94.1	50-150	0				
Methoxychlor	27.03	1.7	10	33.33	0	81.1	50-150	0				
Surr: Decachlorobiphenyl	28.68	0	0	33.3	0	86.1	50-150	0				
Surr: Tetrachloro-m-xylene	31.08	0	0	33.3	0	93.3	50-150	0				

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 1709908  
**Project:** Roxul Phase II Sediment

## QC BATCH REPORT

Batch ID: **107721**      Instrument ID **GC12**      Method: **SW8081A**

MS					Units: µg/Kg			Analysis Date: 9/26/2017 02:05 AM			
Client ID:		Run ID: <b>GC12_170926A</b>			SeqNo: <b>4660009</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	43.6	2.2	9.8	32.72	18.24	77.5	50-150	0			
4,4'-DDE	1101	1.9	9.8	32.72	1013	269	50-150	0			SEO
4,4'-DDT	349	1.6	9.8	32.72	309.5	121	50-150	0			EO
Aldrin	19.4	2	9.8	32.72	0	59.3	50-150	0			
alpha-BHC	21.9	1.9	9.8	32.72	0	66.9	50-150	0			
alpha-Chlordane	19.97	1.9	9.8	32.72	0	61	50-150	0			
beta-BHC	18.69	1.8	9.8	32.72	0	57.1	50-150	0			
delta-BHC	21.13	5.1	9.8	32.72	0	64.6	50-150	0			
Dieldrin	43.95	1.9	9.8	32.72	18.16	78.8	50-150	0			
Endosulfan I	21.32	1.6	9.8	32.72	0.3251	64.2	50-150	0			
Endosulfan II	22.66	1.9	9.8	32.72	0	69.2	50-150	0			
Endosulfan sulfate	25.14	2	9.8	32.72	0	76.8	50-150	0			
Endrin	26.47	2	9.8	32.72	1.498	76.3	50-150	0			
Endrin aldehyde	18.92	1.7	9.8	32.72	0	57.8	50-150	0			
Endrin ketone	21.89	1.8	9.8	32.72	1.544	62.2	50-150	0			
gamma-BHC (Lindane)	20.58	2.4	9.8	32.72	0	62.9	50-150	0			
gamma-Chlordane	18.91	2.2	9.8	32.72	0	57.8	50-150	0			
Heptachlor	21.16	2.8	9.8	32.72	0	64.7	50-150	0			
Heptachlor epoxide	26.44	1.8	9.8	32.72	0	80.8	50-150	0			
Methoxychlor	21.67	1.7	9.8	32.72	0	66.2	50-150	0			
Surr: Decachlorobiphenyl	20.5	0	0	32.69	0	62.7	50-150	0			
Surr: Tetrachloro-m-xylene	20.42	0	0	32.69	0	62.5	50-150	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709908  
 Project: Roxul Phase II Sediment

# QC BATCH REPORT

Batch ID: **107721** Instrument ID **GC12** Method: **SW8081A**

MSD					Sample ID: <b>1709903-56A MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>9/26/2017 02:18 AM</b>		
Client ID:					Run ID: <b>GC12_170926A</b>			SeqNo: <b>4660010</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	46.62	2.1	9.7	32.2	18.24	88.1	50-150	43.6	6.71	35		
4,4'-DDE	1062	1.9	9.7	32.2	1013	155	50-150	1101	3.54	35	SEO	
4,4'-DDT	319.9	1.5	9.7	32.2	309.5	32.3	50-150	349	8.69	35	SEO	
Aldrin	21.22	1.9	9.7	32.2	0	65.9	50-150	19.4	8.98	35		
alpha-BHC	23.53	1.9	9.7	32.2	0	73.1	50-150	21.9	7.18	35		
alpha-Chlordane	21.35	1.8	9.7	32.2	0	66.3	50-150	19.97	6.64	35		
beta-BHC	19.61	1.8	9.7	32.2	0	60.9	50-150	18.69	4.83	35		
delta-BHC	22.03	5	9.7	32.2	0	68.4	50-150	21.13	4.17	35		
Dieldrin	39.03	1.8	9.7	32.2	18.16	64.8	50-150	43.95	11.9	35		
Endosulfan I	22.92	1.6	9.7	32.2	0.3251	70.2	50-150	21.32	7.25	35		
Endosulfan II	23.53	1.8	9.7	32.2	0	73.1	50-150	22.66	3.79	35		
Endosulfan sulfate	25.29	2	9.7	32.2	0	78.5	50-150	25.14	0.604	35		
Endrin	26.54	2	9.7	32.2	1.498	77.8	50-150	26.47	0.258	35		
Endrin aldehyde	19.51	1.7	9.7	32.2	0	60.6	50-150	18.92	3.08	35		
Endrin ketone	22.8	1.8	9.7	32.2	1.544	66	50-150	21.89	4.09	35		
gamma-BHC (Lindane)	22.24	2.3	9.7	32.2	0	69.1	50-150	20.58	7.76	35		
gamma-Chlordane	20.91	2.2	9.7	32.2	0	64.9	50-150	18.91	10	35		
Heptachlor	22.85	2.7	9.7	32.2	0	71	50-150	21.16	7.7	35		
Heptachlor epoxide	28.89	1.8	9.7	32.2	0	89.7	50-150	26.44	8.86	35		
Methoxychlor	21.87	1.7	9.7	32.2	0	67.9	50-150	21.67	0.893	35		
Surr: Decachlorobiphenyl	21.43	0	0	32.18	0	66.6	50-150	20.5	4.42	35		
Surr: Tetrachloro-m-xylene	21.7	0	0	32.18	0	67.4	50-150	20.42	6.07	35		

The following samples were analyzed in this batch:

1709908-01A	1709908-02A	1709908-03A
1709908-04A	1709908-05A	1709908-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ERM, Inc  
 Work Order: 1709908  
 Project: Roxul Phase II Sediment

## QC BATCH REPORT

Batch ID: **107739** Instrument ID **ICPMS3** Method: **SW6020A**

<b>MBLK</b>		Sample ID: <b>MBLK-107739-107739</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:02 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651771</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	U	0.037	0.25								
Lead	0.0097	0.004	0.25								J

<b>LCS</b>		Sample ID: <b>LCS-107739-107739</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:04 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651772</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.446	0.037	0.25	5	0	88.9	80-120	0			
Lead	4.506	0.004	0.25	5	0	90.1	80-120	0			

<b>MS</b>		Sample ID: <b>1709936-04AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:46 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651799</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	7.049	0.054	0.36	7.257	0.3755	92	75-125	0			
Lead	7.713	0.0058	0.36	7.257	0.653	97.3	75-125	0			

<b>MSD</b>		Sample ID: <b>1709936-04AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>9/21/2017 06:48 PM</b>			
Client ID:		Run ID: <b>ICPMS3_170921A</b>				SeqNo: <b>4651800</b>		Prep Date: <b>9/21/2017</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	7.044	0.053	0.36	7.194	0.3755	92.7	75-125	7.049	0.0662	20	
Lead	7.625	0.0058	0.36	7.194	0.653	96.9	75-125	7.713	1.15	20	

The following samples were analyzed in this batch:

1709908-01A	1709908-02A	1709908-03A
1709908-04A	1709908-05A	1709908-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709908  
 Project: Roxul Phase II Sediment

# QC BATCH REPORT

Batch ID: **R220645** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R220645</b>				Units: % of sample			Analysis Date: <b>9/22/2017 11:00 PM</b>			
Client ID:		Run ID: <b>MOIST_170922E</b>				SeqNo: <b>4653870</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	U	0.025	0.050									

<b>LCS</b>		Sample ID: <b>LCS-R220645</b>				Units: % of sample			Analysis Date: <b>9/22/2017 11:00 PM</b>			
Client ID:		Run ID: <b>MOIST_170922E</b>				SeqNo: <b>4653869</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0				

<b>DUP</b>		Sample ID: <b>17091301-50A DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2017 11:00 PM</b>			
Client ID:		Run ID: <b>MOIST_170922E</b>				SeqNo: <b>4653857</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	16.72	0.025	0.050	0	0	0	0-0	16.93	1.25	5	H	

<b>DUP</b>		Sample ID: <b>1709908-01a DUP</b>				Units: % of sample			Analysis Date: <b>9/22/2017 11:00 PM</b>			
Client ID: <b>SED-2 (0.5'-1.0') Grab</b>		Run ID: <b>MOIST_170922E</b>				SeqNo: <b>4653866</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	23.91	0.025	0.050	0	0	0	0-0	24.46	2.27	5		

The following samples were analyzed in this batch:

1709908-01a	1709908-02A	1709908-03A
-------------	-------------	-------------

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 1709908  
 Project: Roxul Phase II Sediment

# QC BATCH REPORT

Batch ID: **R220673** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R220673</b>				Units: % of sample			Analysis Date: <b>9/24/2017 02:15 PM</b>			
Client ID:		Run ID: <b>MOIST_170924A</b>				SeqNo: <b>4654522</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	U	0.025	0.050									

<b>LCS</b>		Sample ID: <b>LCS-R220673</b>				Units: % of sample			Analysis Date: <b>9/24/2017 02:15 PM</b>			
Client ID:		Run ID: <b>MOIST_170924A</b>				SeqNo: <b>4654520</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0				

<b>DUP</b>		Sample ID: <b>1709908-04A DUP</b>				Units: % of sample			Analysis Date: <b>9/24/2017 02:15 PM</b>			
Client ID: <b>SED-4 (0'-0.5') Grab</b>		Run ID: <b>MOIST_170924A</b>				SeqNo: <b>4654480</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	29.53	0.025	0.050	0	0	0	0-0	32.3	8.96	5	R	

<b>DUP</b>		Sample ID: <b>1709948-10A DUP</b>				Units: % of sample			Analysis Date: <b>9/24/2017 02:15 PM</b>			
Client ID:		Run ID: <b>MOIST_170924A</b>				SeqNo: <b>4654501</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	22.86	0.025	0.050	0	0	0	0-0	23.6	3.19	5		

The following samples were analyzed in this batch:

1709908-04A	1709908-05A	1709908-06A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.



☒ **ALS Environmental**  
1740 Union Carbide Drive  
South Charleston, WV 25303  
(Tel) 304.356.3168  
(Fax) 304.205.6262

## Chain of Custody Form

Page 1 of 1

5269

☐ **ALS Environmental**  
3352 128th Avenue  
Holland, Michigan 49424  
(Tel) 616.399.6070  
(Fax) 616.399.6185

ALS Project Manager:

ALS Work Order #: 1709908

Customer Information			Project Information					Parameter/Method Request for Analysis												
Purchase Order		Project Name	ROXU Phase II					A	Pesticides 8081A											
Work Order		Project Number	SEDIMENT					B	Lead and Arsenic VIA 6020A											
Company Name		Bill To Company	ERM					C												
Send Report To		Invoice Attn.	Dave Connelly					D												
Address		Address	204 Chase Dr					E												
City/State/Zip		City/State/Zip	Hurricane, WV					F												
Phone		Phone	304 7524777					G												
Fax		Fax						H												
e-Mail Address								I												
								J												

No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	#Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SED-2 (0.5-1.0')	G	9/14/17	1416	S		1	/	/									
2	SED-3 (0-0.5')	G	9/14/17	1425	S		1	/	/									
3	SED-3 (0.5-1.0')	G	9/14/17	1428	S		1	/	/									
4	SED-4 (0-0.5')	G	9/14/17	1438	S		1	/	/									
5	SED-4 (0.5-1.0')	G	9/14/17	1441	S		1	/	/									
6	SED-2 (0-0.5')	G	9/14/17	1413	S		1	/	/									
7																		
8																		
9																		
10																		

Sampler(s): Please Print & Sign <i>Ryan Brisson</i>			Shipment Method: CARRIER		Turnaround Time in Business Days (BD): <input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD				Results Due Date:	
Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:  QC Package: (Check Box Below) Level II: Standard QC <input checked="" type="checkbox"/> Level III: Standard QC + Raw Data Level IV: SW846 Methods/CLP Other:					
<i>[Signature]</i>	9/15/17	1447	<i>[Signature]</i>	46°C						
Relinquished by:	Date:	Time:	Received by:	Temp:						
<i>[Signature]</i>	9/15/17	1529	<i>[Signature]</i>	ALS						
Relinquished by:	Date:	Time:	Received by:	Temp:	Level II: Standard QC <input type="checkbox"/> Level III: Standard QC + Raw Data <input type="checkbox"/> Level IV: SW846 Methods/CLP <input type="checkbox"/> Other:					
<i>[Signature]</i>	9/15/17	1700	<i>[Signature]</i>	ALS						
Relinquished by:	Date:	Time:	Received by (Laboratory):	Temp:	Level II: Standard QC <input type="checkbox"/> Level III: Standard QC + Raw Data <input type="checkbox"/> Level IV: SW846 Methods/CLP <input type="checkbox"/> Other:					
<i>[Signature]</i>	9/16/17	0945	<i>[Signature]</i>	46.0°C						
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):							

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

Copyright 2014 by ALS Environmental

Sample Receipt Checklist

Client Name: ERM-HURRICANE

Date/Time Received: 15-Sep-17 15:29

Work Order: 1709908

Received by: JAS

Checklist completed by Janet Smith  
eSignature

18-Sep-17  
Date

Reviewed by: Rebecca Kiser  
eSignature

18-Sep-17  
Date

Matrices: Soil

Carrier name: Courier

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>&lt;6C</u> <u>IR</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:			
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes: Holland <6.0 c

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

## *Soil Cleanup Report – Former Mixing Station*



**Environmental  
Resources  
Management**

204 Chase Drive  
Hurricane, WV 25526  
(304) 757-4777  
(304) 757-4799 (fax)  
www.erm.com



February 16, 2018

Mette Dreijstel  
Roxul USA LLC  
4594 Cayce Road  
Byhalia, MS 38611

**RE: Soil Excavation – Former Pesticide Mixing Station  
Roxul USA LLC  
365 Granny Smith Lane  
Kearneysville, West Virginia  
ERM Project No. 0407978**

Dear Mette:

On January 22-24, 2018, Environmental Resources Management, Inc. (ERM) oversaw soil remediation activities at the Roxul USA LLC (Roxul) facility (Site) located at 365 Granny Smith Lane in Kearneysville, Jefferson County, West Virginia (see *Attachment 1 – Figure 1*). Soil excavation and sampling activities were conducted in accordance with an ERM site-specific Health and Safety Plan (HASP), designed to be protective of Site workers and the general public from potential hazards associated with Site activities. Upon completion of soil removal, ERM collected a total of nine confirmatory soil samples.

***Project Background***

The Site consists of approximately 194 acres that was historically used for commercial agricultural operations, including former fruit orchards. During August and September 2017, ERM conducted site investigation activities, including delineation of pesticide-impacted soils in the vicinity of a former pesticide mixing station (*Attachment 1-Figure 2*). Former site investigation activities are documented in Site Characterization Report for the Non-VRP Parcel, prepared by ERM in January 2018.

Based on delineation of pesticide-impacted soils associated with former mixing station, approximately 115 cubic yards (yd<sup>3</sup>) of soil were planned for excavation and disposal. Locations of soil delineation samples and the area for remediation are illustrated on *Attachment 1 – Figure 3*.

***Soil Waste Profile***

Soil analytical results for samples collected within the former mixing area were used to develop a non-hazardous waste profile for pesticide-impacted soil. Waste Profile 107746WV (included as *Attachment 2*), was approved for disposal of up to 300 tons of soil at LCS Services Landfill, located in Hedgesville, West Virginia.

### ***Soil Remediation and Confirmation Soil Samples***

On January 22 – 24, 2018, ERM oversaw soil remediation activities that consisted of soil excavation in the vicinity of the former mixing station. Soil excavation was performed by ALL Construction Inc. (ALL). Prior to commencing soil remediation activities, ERM used a Trimble® Geo 7x GPS to locate and define the limits of proposed excavation (*Attachment 1 – Figure 3*).

ALL used a Caterpillar® 336E excavator, equipped with a 48-inch bucket, to excavate and remove a total of approximately 135.5 tons of soil. Excavated soils were direct loaded into dump trucks for offsite disposal at the LCS Services Landfill. Waste disposal manifests and weight tickets for removed soil are included in *Attachment 3*.

Upon completion of soil removal, ERM collected a total of nine confirmation soil samples (MA-CS-1 through MA-CS-9), from the floor of the excavation. Final dimensions of the excavated area measured approximately 35 feet by 35 feet down to a depth of approximately 2.5 feet below ground surface (bgs). Sample collection equipment was decontaminated between sampling locations using Alconox®, isopropyl alcohol, hexane, and deionized water. Decontamination fluids were applied using laboratory-grade Nalgene® spray bottles to minimize generation of decontamination fluids. Confirmation soil samples were properly labeled, placed in laboratory-supplied glass containers, and preserved on ice. Samples were submitted for pesticide analysis via EPA Method 8081 to ALS Global (a West Virginia certified laboratory), located in South Charleston, West Virginia. Soil confirmation sample locations are illustrated on *Attachment 1 – Figure 4*.

The area excavated as part of the soil remediation is part of an overall site grading plan for development of the property. This area will be restored as part of the overall site development activities. A photo log of the soil excavation activities is included as *Attachment 4*.

### ***Confirmation Soil Sample Results***

Confirmation soil sample analytical results were compared to West Virginia Table 60-3B Industrial Soil De Minimis Standards. Pesticide concentrations were not detected above Industrial Soil De Minimis Standards in any of the nine confirmation samples.

A summary table of confirmation soil sample analytical results is included in *Attachment 5 – Table 1* and the laboratory analytical report is included in *Attachment 6*.

### ***Summary and Conclusion***

Based on field observations and laboratory analytical data for confirmation soil samples, the soils above industrial de minimis levels in the vicinity of the former pesticide mixing have been effectively remediated.

Mette Drejestel  
February 16, 2018

*Closing*

ERM appreciates the opportunity to have provided environmental consulting services to Roxul for this project. Should you have questions or require further information please feel free to contact me at 304-757-4777 extension 103 or by email at [david.connelly@erm.com](mailto:david.connelly@erm.com).

Sincerely,

A handwritten signature in blue ink, appearing to read "David Connelly", with a horizontal line underneath.

David Connelly  
*Licensed Remediation Specialist*

Attachment 1 - Figures

- Figure 1 - Site Location Map
- Figure 2 - Site Plan/Former Mixing Area Location
- Figure 3 - Soil Characterization Sample Locations
- Figure 4 - Soil Confirmation Sample Locations

Attachment 2 - Soil Waste Profile

Attachment 3 - Waste Disposal Manifests and Weight Tickets

Attachment 4 - Photo Log

Attachment 5 - Table 1: Soil Confirmation Sampling Results

Attachment 6 - Soil Analytical Report

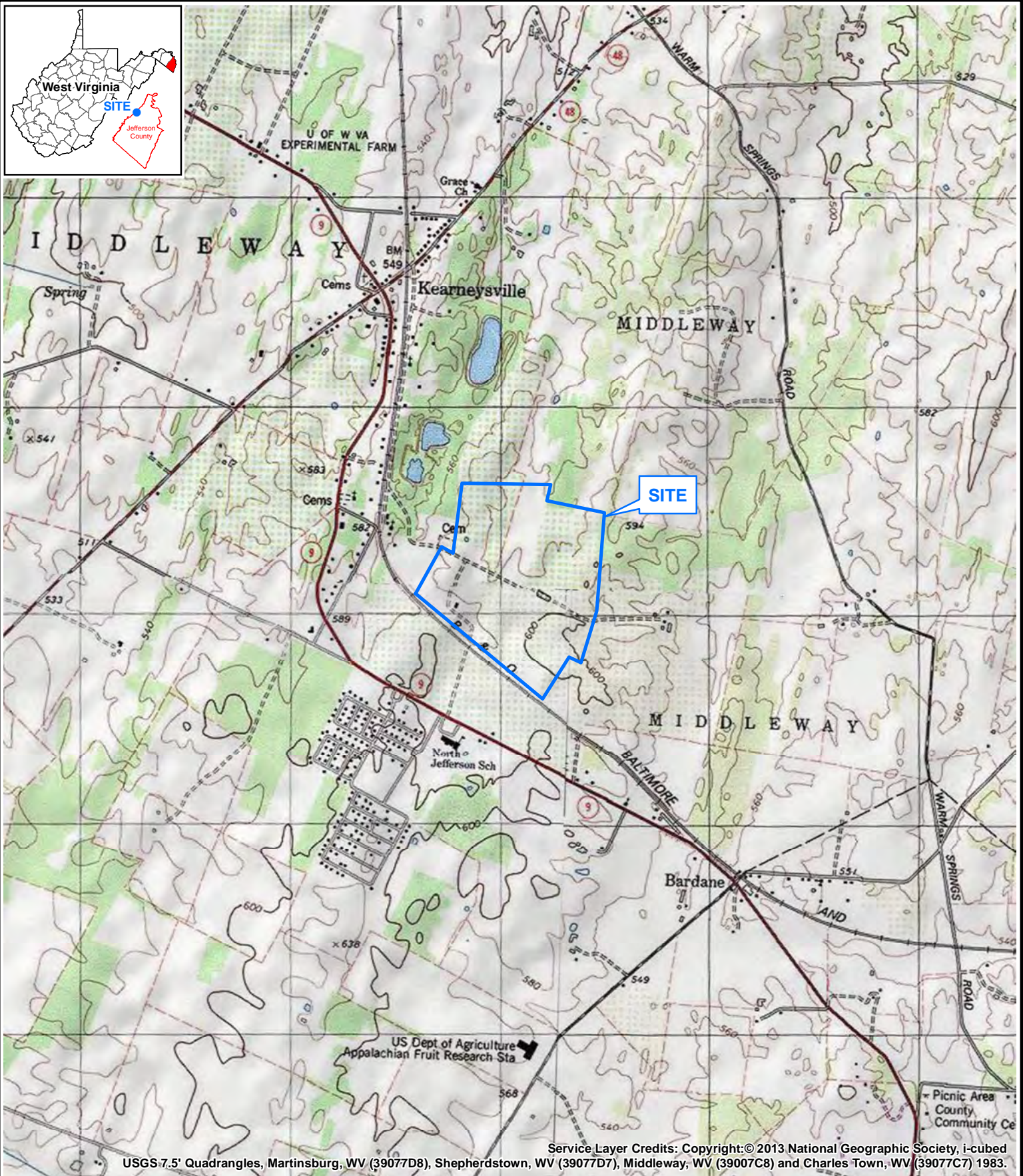
cc: ERM file (electronic)

# **Attachment 1**

## **Figures**

**Environmental Resources Management,**  
204 Chase Drive  
Hurricane, West Virginia 25526  
(304) 757-4777





N



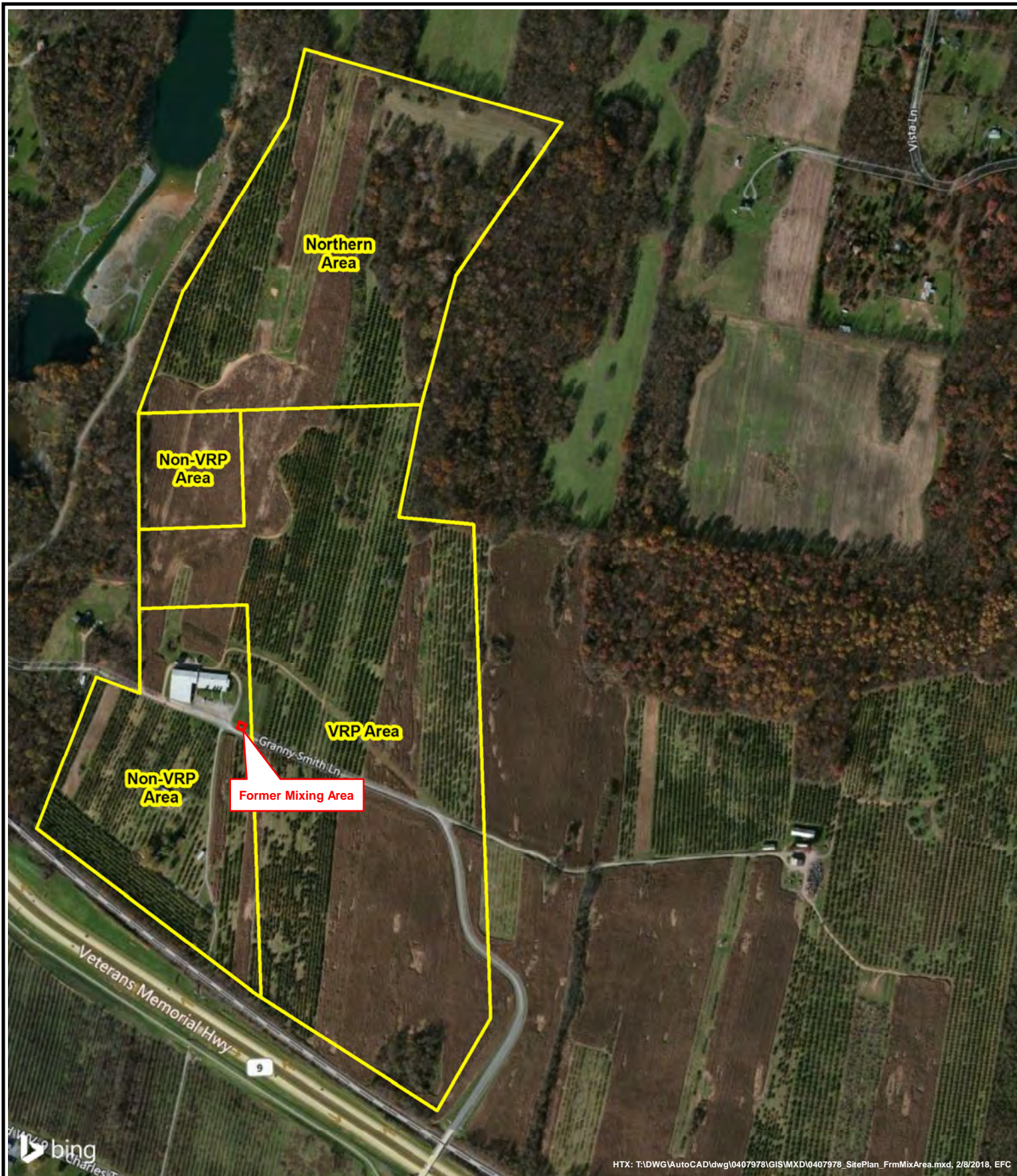
0 1,000 2,000 Feet



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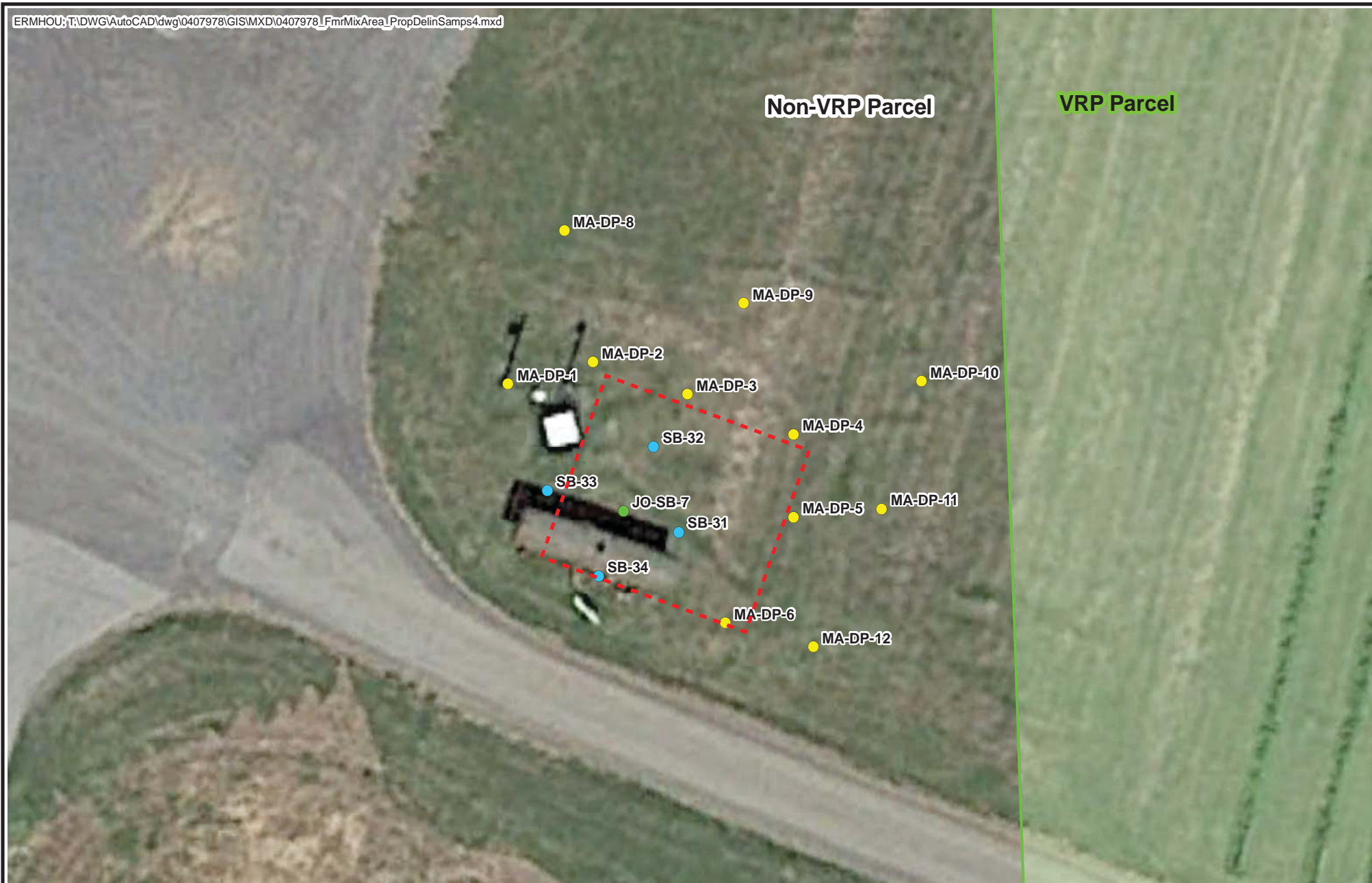
**Attachment 1 - Figure 1**  
**Site Location Map**  
Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia





**Attachment 1 - Figure 2**  
**Site Plan/Former Mixing Area Location**  
 Jefferson Orchard Site  
 Project Shuttle  
 Kearneysville, West Virginia





0 20 Feet

#### Legend

- Original Sample Location from March 2017 Phase II ESA
- Sample Location from August 2017 Sampling
- MA-DP-# - Mixing Area Delineation Point



VRP Site Boundary



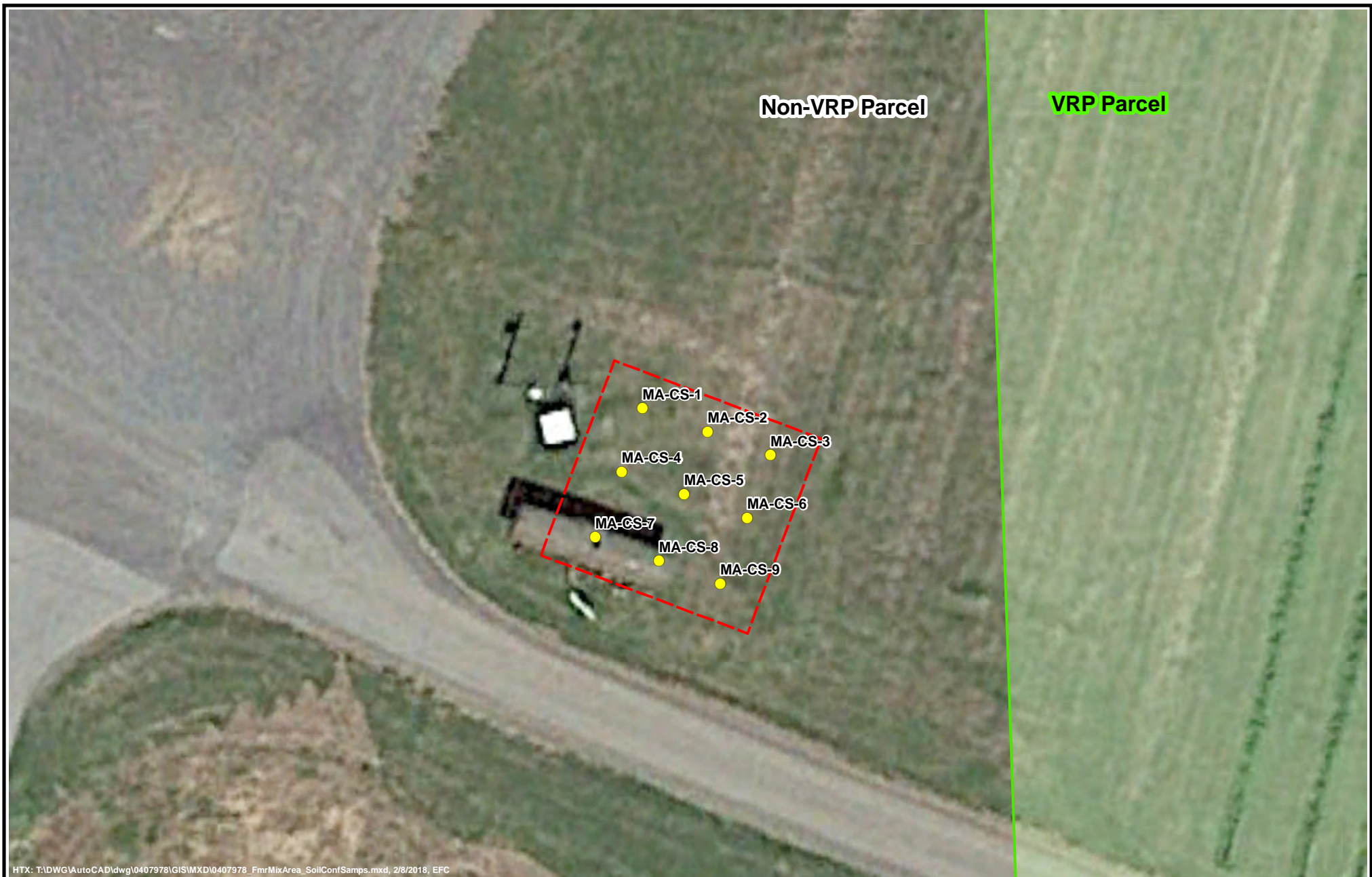
Approximate Area of Proposed Excavation

## Attachment 1 - Figure 3 Soil Characterization Sample Locations Former Mixing Area

Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia



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0 20 Feet



Environmental Resources Management  
www.erm.com

**Legend**

- MA-CS-# - Mixing Area Confirmation Sample
- Area of Excavation
- VRP Site Boundary

**Attachment 1 - Figure 4**  
**Soil Confirmation Sample Locations**  
Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia

## **Attachment 2 Soil Waste Profile**

**Environmental Resources Management,**  
204 Chase Drive  
Hurricane, West Virginia 25526  
(304) 757-4777





# Non-Hazardous WAM Approval

Requested Management Facility: LCS Services Landfill

Profile Number: 107746WV

Waste Approval Expiration Date: 10/30/2018

## APPROVAL DETAILS

Approval Decision: ☒ Approved ☐ Not Approved

Profile Renewal: ☐ Yes ☒ No

Management Method: Direct Landfill

Generator Name: Roxul USA, Inc

Material Name: Pesticide Impacted Soil (WM012A)

Management Facility Precautions, Special Handling Procedures or Limitation on approval:

### Generator Conditions

- Waste manifest or applicable shipping document must accompany load.
- The waste profile number must appear on the shipping papers.

JOHN WAKIN [11/01/2017]:

Quantity Approved: 300 Tons

### Facility Conditions

JOHN WAKIN [11/01/2017]:

Refer to Condition (4) of this Minor Permit Modification

WM Authorization Name: JOHN WAKIN

Title: Waste Approval Manager

WM Authorization Signature: 

Date: 10/27/2017

Agency Authorization (If Required): \_\_\_\_\_

Date: \_\_\_\_\_

**THINK GREEN.**

QUESTIONS? CALL 800 963 4776 FOR ASSISTANCE

Last Revised April 11, 2014  
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west virginia department of environmental protection

Division of Water and Waste Management  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Telephone: (304) 926-0499  
Fax: (304) 926-0456

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## Minor Permit Modification for Disposal of Petroleum-Contaminated Materials

SWPU ID: 17-10-66

Landfill: North Mountain

Generator: Roxul USA, Inc.

Request Received: October 30, 2017

Request Dated: October 26, 2017

Waste: PCS & Pesticide Containing Soils

Generated at: Kearneysville, WV

### Comments and/or Conditions

The following checked (X) comments and/or conditions apply:

1. ☒ The West Virginia Department of Environmental Protection, Office of Solid Waste, has reviewed the information submitted by the North Mountain Landfill. Based upon this information, the WVDEP believes that this waste is not hazardous waste under the Resource Conservation and Recovery Act. Consequently, a minor permit modification is granted for the disposal of this waste at the **North Mountain Landfill**.
2. ☒ Quantity Approved: 300 Tons  
☐ This Quantity Approved is an increase of the amount allowed by the Minor Permit Modification granted
3. ☒ This amount may be received before October 31, 2018.  
☐ The above date represents an extension of the time allowed by the Minor Permit Modification granted
4. ☒ Approved for disposal:  
☐ TPH (.....) > 10,000 mg/kg: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that TPH (.....) is less than 10,000 mg/kg, TOVs are less than 100 ppm, and if DRO is present at more than 100 mg/kg, until total PAH is less than 100 mg/kg, and then disposed of within 30 days of obtaining those test results.  
☒ TPH (GRO + DRO + ORO) < 10,000 mg/kg:  
  - a. DRO > 100 mg/kg and/or TOVs > 100 ppm: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that, as

Promoting a healthy environment.

applicable, total PAH is less than 100 mg/kg and TOVs are less than 100 ppm, and then disposed of within 30 days of obtaining those test results.

- b. DRO < 100 mg/kg and TOVs < 100 ppm: This waste must be disposed of within 30 days of receiving the waste or this minor permit modification, whichever is later.
5. ☐ Approved for use as daily cover or disposal:
- ☐ TPH (.....) > 5,000 mg/kg: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that TPH (.....) is less than 5,000 mg/kg, TOVs are less than 100 ppm, and if DRO is present at more than 100 mg/kg, until total PAH is less than 100 mg/kg, and then used as daily cover or disposed of within 30 days of obtaining those test results.
- ☐ TPH (.....) < 5,000 mg/kg
- a. DRO > 100 mg/kg and/or TOVs > 100 ppm: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that, as applicable, total PAH is less than 100 mg/kg and TOVs are less than 100 ppm, and then disposed of within 30 days of obtaining those test results.
- b. DRO < 100 mg/kg and TOVs < 100 ppm: This waste must be used as daily cover or disposed of within 30 days of receiving the waste or this minor permit modification, whichever is later.
6. ☐ After a minimum of thirty days of aeration, this waste must be tested for \_\_\_\_\_ and the analytical results submitted to this office for review before disposal.
7. ☒ Petroleum contaminated materials that are not used as daily cover shall be included in monthly tonnage calculations.
8. ☐ Petroleum contaminated materials (PCM) that are used as daily cover may be excluded from monthly tonnage calculations, provided that all of the following conditions are met:
- a. Daily deposition of solid waste is confined to as small an area as practical in accordance with the Solid Waste Management Rule, 33 C.S.R. 1-4.6.a.1.A.
- b. Calculations for the amount to be used as daily cover and exempted from the tonnage limits shall be based on an eight foot (8') vertical cell height for solid waste disposed of daily.
- c. Under no circumstances, shall the amount of PCM used as daily cover and exempted from monthly tonnage calculations, exceed the rate of 0.14 tons per one (1) ton of solid waste.
- d. Example: A facility that receives 200 tons per day of solid waste, including PCM that is suitable for use as daily cover, shall not exceed 28 tons per day for tonnage exemption.

Required formula for calculation:

$$0.14 \times \text{tons of solid waste per day} = \text{tons of cover material permitted per day.}$$

9. ☒ The disposal or use as daily cover of this waste must take place during normal working hours, will not be exempt from assessment fees, and must be included in the monthly tonnage report.



10. ☐ Additional comments and/or conditions:
11. ☒ If you have questions or need additional information, please contact David Johnston at (304) 926-0499, extension 1296 or David.L.Johnston@wv.gov

**Minor Permit Modification Is Granted:**

  
\_\_\_\_\_  
Scott G. Mandirola  
Director

  
\_\_\_\_\_  
Date



Requested Facility: LCS Services Landfill ☐ Unsure Profile Number: 107746WV  
☐ Multiple Generator Locations (Attach Locations) ☒ Request Certificate of Disposal ☐ Renewal? Original Profile Number: \_\_\_\_\_

**A. GENERATOR INFORMATION (MATERIAL ORIGIN)**

1. Generator Name: Roxul USA, Inc.  
2. Site Address: 71 Edmond Rd. Suite 6  
(City, State, ZIP) Kearneysville, WV 25430  
3. County: Jefferson  
4. Contact Name: Kenneth J. Cammarato  
5. Email: Ken.cammarato@roxul.com  
6. Phone: (662) 851-4734 7. Fax: N/A  
8. Generator EPA ID: \_\_\_\_\_ ☒ N/A  
9. State ID: \_\_\_\_\_ ☒ N/A

**C. MATERIAL INFORMATION**

1. Common Name: Soil  
Describe Process Generating Material: ☐ See Attached  

Soil excavated from an area where a former pesticide mixing station was previously located.

  
2. Material Composition and Contaminants: ☐ See Attached  

1. Soil	100%
2.	
3.	
4.	

Total comp. must be equal to or greater than 100% ☒ ≥100%

3. State Waste Codes: \_\_\_\_\_ ☒ N/A  
4. Color: Light to dark brown  
5. Physical State at 70°F: ☒ Solid ☐ Liquid ☐ Other: \_\_\_\_\_  
6. Free Liquid Range Percentage: \_\_\_\_\_ to \_\_\_\_\_ ☒ N/A  
7. pH: 6.96 to 6.96 ☐ N/A  
8. Strong Odor: ☐ Yes ☒ No Describe: \_\_\_\_\_  
9. Flash Point: ☐ <140°F ☐ 140°–199°F ☒ ≥200° ☐ N/A

**E. ANALYTICAL AND OTHER REPRESENTATIVE INFORMATION**

1. Analytical attached ☒ Yes  
Please identify applicable samples and/or lab reports:  

JO-7 (0-6"): collected on March 17, 2017  
WC-1 Comp: collected on September 14, 2017

  
2. Other information attached (such as MSDS)? ☐ Yes

**G. GENERATOR CERTIFICATION (PLEASE READ AND CERTIFY BY SIGNATURE)**

By signing this EZ Profile™ form, I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of this material, and that all relevant information necessary for proper material characterization and to identify known and suspected hazards has been provided. Any analytical data attached was derived from a sample that is representative as defined in 40 CFR 261 – Appendix 1 or by using an equivalent method. All changes occurring in the character of the material (i.e., changes in the process or new analytical) will be identified by the Generator and be disclosed to Waste Management prior to providing the material to Waste Management.

If I am an agent signing on behalf of the Generator, I have confirmed with the Generator that information contained in this Profile is accurate and complete.

Name (Print): Kenneth J. Cammarato Date: Oct 20, 2017  
Title: VP/ Counsel  
Company: Roxul USA, Inc.

**B. BILLING INFORMATION**☐ SAME AS GENERATOR

1. Billing Name: ERM  
2. Billing Address: 204 Chase Drive  
(City, State, ZIP) Hurricane, WV, 25526  
3. Contact Name: David Connelly  
4. Email: david.connelly@erm.com  
5. Phone: 304.757.4777 6. Fax: 304.757.4799  
7. WM Hauled? ☒ Yes ☐ No  
8. P.O. Number: \_\_\_\_\_  
9. Payment Method: ☒ Credit Account ☐ Cash ☐ Credit Card

**D. REGULATORY INFORMATION**

1. EPA Hazardous Waste? ☐ Yes\* ☒ No  
Code: \_\_\_\_\_  
2. State Hazardous Waste? ☐ Yes ☒ No  
Code: \_\_\_\_\_  
3. Is this material non-hazardous due to Treatment, Delisting, or an Exclusion? ☐ Yes\* ☒ No  
4. Contains Underlying Hazardous Constituents? ☐ Yes\* ☒ No  
5. From an industry regulated under Benzene NESHAP? ☐ Yes\* ☒ No  
6. Facility remediation subject to 40 CFR 63 GGGGG? ☐ Yes\* ☒ No  
7. CERCLA or State-mandated clean-up? ☐ Yes\* ☒ No  
8. NRC or State-regulated radioactive or NORM waste? ☐ Yes\* ☒ No  
**\*If Yes, see Addendum (page 2) for additional questions and space.**  
9. Contains PCBs? → If Yes, answer a, b and c. ☐ Yes ☒ No  
a. Regulated by 40 CFR 761? ☐ Yes ☒ No  
b. Remediation under 40 CFR 761.61 (a)? ☐ Yes ☒ No  
c. Were PCB imported into the US? ☐ Yes ☒ No  
10. Regulated and/or Untreated Medical/Infectious Waste? ☐ Yes ☒ No  
11. Contains Asbestos? ☐ Yes ☒ No  
→ If Yes: ☐ Non-Friable ☐ Non-Friable – Regulated ☐ Friable

**F. SHIPPING AND DOT INFORMATION**

1. ☒ One-Time Event ☐ Repeat Event/Ongoing Business  
2. Estimated Quantity/Unit of Measure: 300  
☒ Tons ☐ Yards ☐ Drums ☐ Gallons ☐ Other: \_\_\_\_\_  
3. Container Type and Size: 20 cubic yard roll-off dumpsters  
4. USDOT Proper Shipping Name: \_\_\_\_\_ ☒ N/A

Certification Signature



## West Virginia DEP Waste Characterization Form

Page 1

[For DEP use. SWPU ID: \_\_\_\_\_]

**Generator:** Complete Parts A through G. Do not leave any blanks. Enter **N/A** for every item that is "not applicable." Submit with supporting documents to the landfill that will accept the waste. Please do not include a cover letter except to explain something not covered by the Waste Characterization Form. IDs are for the Generator's convenience and are optional. E-mail addresses are preferred but optional.

### A. Responsible Parties

Landfill's ID: SWF-1020

Generator: Roxul USA, Inc.

Generator's ID: \_\_\_\_\_

Contact Person: Kenneth J Cammarato

Telephone: 1-662-851-4734

Address: 71 Edmond Rd., Suite 6

City, State, Zip: Kearneysville, WV 25430

E-mail: Ken.cammarato@roxul.com

Transporter: Shenandoah Valley Hauling

Transporter's ID: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone: 304-276-6975

Address: 25 Bowling Lane

City, State, Zip: Martinsburg, WV, 25401

E-mail: \_\_\_\_\_

Contractor: ERM, Inc.

Contractor's ID: \_\_\_\_\_

Contact Person: David Connelly

Telephone: 304-757-4777

Address: 204 Chase Drive

City, State, Zip: Hurricane, WV, 25526

E-mail: David.Connelly@erm.com

Laboratory: ALS Environmental

Laboratory ID: \_\_\_\_\_

Contact Person: Rebecca Kiser

Telephone: 304-356-3168

Address: 1740 Union Carbide Drive

City, State, Zip: South Charleston, WV, 25303 E-mail: Rebecca.Kiser@alsglobal.com

### B. Waste Description

Type of special waste according to 33 CSR § 1-4.13 (Circle all that apply; if none apply, make no response):

Petroleum-  
contaminated soil

Asbestos Wastes

Liquids

Tires

Drums

Bulky Goods

Infectious Waste

Sewage Sludge

Automobile  
Shredder Fluff

Municipal  
Incinerator Ash

Anticipated total weight as delivered to landfill (tons): 300 Over what length of time? 6 months

Detailed description of the process that generated this waste: This waste will be generated from soil excavation activities at a site planned for construction. Excavated soil is associated with a former mixing area for pesticide sprayers used on former apple orchards.

### C. Hazardous Potential

All questions in Section C apply to all wastes. Answer "Yes" or "No." Leave no blanks and do not enter N/A.

According to 40 C.F.R. is this: A characteristic hazardous waste: No A listed hazardous waste: No

An exempt or excluded HW: No Prohibited by Land Disposal Restrictions of 40 C.F.R. § 268: No

Does this waste contain: PCBs: No Dioxins: No Radioactive material: No

**D. General Characteristics**

List the constituents of this waste present at more than about 1% by weight. Use generic names, not trade names. Weight percents may be by generator knowledge, lab tests, or MSDS.

Constituent	Wt. %	Constituent	Wt. %	Constituent	Wt. %
Pesticide Impacted	100				
Soil					

List the constituents present at less than about 1% by weight: \_\_\_\_\_

Consistency at 70°F and 1 atmosphere (circle): solid paste slush slurry liquid gas

Percent solids by weight: 100 Determined visually? \_\_\_\_\_ Or by test (specify): SW1311

Color (shade & hue): Light to Dark Brown Odor (intensity & type): \_\_\_\_\_

**E. Petroleum Contaminated Soil:**

Maximum mg/kg: GRO 2.86 DRO 14.7 ORO 5.6 BTEX <0.0081 Benzene <0.0027

**F. Miscellaneous:** Have you attached a photograph, sketch, or map of the site at the time of sampling with sample locations marked? Yes

Place where the waste was generated (city, intersection, mile marker, etc.): Kearneysville, WV

Additional comments: Samples were collected from soil near a former pesticide mixing station at a former orchard site.

**G. Documents Enclosed** (check all that apply)

MSDS \_\_\_\_\_ Chain of Custody XX Lab Certification of Results XX Lab Report XX Photo \_\_\_\_\_

Analytical Summary: XX Report \_\_\_\_\_ Map \_\_\_\_\_ Other (specify) \_\_\_\_\_

**H. Generator Certification**

I am legally authorized to represent the Generator. All information presented in this characterization is the result of (1) my knowledge of this waste or (2) laboratory analysis of a representative sample or samples by an EPA method or methods.

I hereby certify that the information supplied on this form and attached to it is complete and accurate, that no negligent or willful omissions of waste characteristics have been made, and that all known or suspected hazards have been disclosed.

Generator's authorized representative: Employer: Roxul USA, Inc. Title: VP/ Counsel

Signature: [Signature] Printed name: Kenneth J. Cammarato Date: Oct 24 2017

**I: Application for Minor Permit Modification.** To be completed by the landfill.

North Mountain

Landfill hereby applies for a minor permit modification to dispose of the special waste characterized by this Waste Characterization Form and attached documents.

Tons Once: 300 Disposed of by (date): 10/26/2018 or Tons per Year for two years: \_\_\_\_\_

Check to request use as daily cover: \_\_\_\_\_ Notes: \_\_\_\_\_

Notes: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: WAM

Date: 10/26/2017

John Wakin





0 20 Feet

**Legend**

- Original Sample Location from March 2017 Phase II ESA
- Sample Location from August 2017 Sampling
- MA-DP-# - Mixing Area Delineation Point



- Proposed Limit of Excavation
- VRP Site Boundary



Environmental Resources Management  
www.erm.com

**Figure 3**  
**Proposed Delineation Sampling -**  
**Former Mixing Area**  
Jefferson Orchard Site  
Project Shuttle  
Kearneysville, West Virginia

**Attachment 3**  
**Waste Disposal Manifests and Weight Tickets**

**Environmental Resources Management,**  
204 Chase Drive  
Hurricane, West Virginia 25526  
(304) 757-4777





# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of	
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 715 George Smith Ln. Kearneysville, WV 25430		A. Manifest Number WMNA	6295164
5. Transporter 1 Company Name ALL Construction		6. US EPA ID Number		B. State Generator's ID	
				C. State Transporter's ID WV000000	
				D. Transporter's Phone	



3711615

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 818024

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/22/2018 Vehicle# ALL CON Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295164  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross
In	01/22/2018 08:33:11	Inbound	JL		80060 lb
Out	01/22/2018 08:57:02	Outbound	JL		29880 lb
					Net 50180 lb
					Tons 25.09

Comments

WASTE MANAGEMENT

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons	100	25.09	Tons				JEFFERSON

Rodney Pohor

Total Tax  
Total Ticket





# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of	
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (If different than mailing): 305 Union St - 4th fl Kearneysville, WV, 25430		A. Manifest Number WMNA	6295165
5. Transporter 1 Company Name All Construction Inc		6. US EPA ID Number		B. State Generator's ID	
				C. State Transporter's ID WV010 438	
				D. Transporter's Phone	



3711656

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 818067

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/22/2018 Vehicle# ALL CON Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295165  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross	
In	01/22/2018 10:25:44	Inbound	JL		Tare	80960 lb
Out	01/22/2018 10:51:18	Outbound	JL		Net	30920 lb
					Tons	50040 lb
						25.02

Comments

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons	100	25.02	Tons				JEFFERSON

*Podmy Rohoban*

Total Tax  
Total Ticket







# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No. 003	2. Page 1 of 1
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 365 Grassy S... Co.		A. Manifest Number WMNA 6295166 B. State Generator's ID
5. Transporter 1 Company Name All Construction		6. US EPA ID Number		C. State Transporter's ID WV101638

Driver's Signature



3711694

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 010106

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/22/2018 Vehicle# ALL CON Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295166  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross
In	01/22/2018 12:14:30	Inbound	JL		70260 lb
Out	01/22/2018 12:33:23	Outbound	JL		32040 lb
					Net 46220 lb
					Tons 23.11

Comments

WASTE MANAGEMENT

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons	100	23.11	Tons				JEFFERSON

Rodney Roberson

Total Tax  
Total Ticket





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No.	Manifest Doc No. 004	2. Page 1 of 1
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 365 Kearneysville Grassy Ln - 4h Kearneysville, WV, 25420		A. Manifest Number WMNA 6295167
5. Transporter 1 Company Name ALL Construction Inc.		6. US EPA ID Number		B. State Generator's ID
				C. State Transporter's ID WV00638
				D. Transporter's Phone

Driver's Signature



3711724

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 818139

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/23/2018 Vehicle# ALL CON Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295167  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross
In	01/23/2018 07:56:05	Inbound	JL		86920 lb
Out	01/23/2018 08:18:28	Outbound	JL		37440 lb
					Net 49480 lb
					Tons 24.74

Comments

WASTE MANAGEMENT

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons 100		24.74	Tons				JEFFERSON

Rodney Robinson

Total Tax  
Total Ticket







# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of	
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 365 Granny Smith Ln. Kearneysville, WV, 25430		A. Manifest Number WMNA	6295168
5. Transporter 1 Company Name ALL Construction Inc.		6. US EPA ID Number		B. State Generator's ID	
7. Transporter 2 Company Name				C. State Transporter's ID WV010638	
Driver's Signature				D. Transporter's Phone	



3711732

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 010142

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/23/2018 Vehicle# trk 2 Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295168  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross
In	01/23/2018 08:15:45	Inbound	JL		82520 lb
Out	01/23/2018 08:33:48	Outbound	JL		28300 lb
					Net 54220 lb
					Tons 27.11

Comments

WASTE MANAGEMENT

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons 100		27.11	Tons				JEFFERSON

Total Tax  
Total Ticket





# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No. 0009	2. Page 1 of 1
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 365 Granny Smith Ln.		A. Manifest Number WMNA 6295169
5. Transporter 1 Company Name All Construction Inc.		6. US EPA ID Number		B. State Generator's ID
Driver's Signature				C. State Transporter's ID WV010638
				D. Transporter's Phone



3711766

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 818177

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/23/2018 Vehicle# ALL CON Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295169  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE-CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross
In	01/23/2018 10:46:27	Inbound	JL		68320 lb
Out	01/23/2018 11:05:43	Outbound	JL		47300 lb
					Net 20940 lb
					Tons 10.47

Comments

WASTE MANAGEMENT

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons	100	10.47	Tons				JEFFERSON

Rodney Rohman

Total Tax  
Total Ticket







# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of	
			007	1	
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 305 Granny Smith Ln Kearneysville, WV, 25061		A. Manifest Number WMNA	6295170
5. Transporter 1 Company Name All Construction DT319		6. US EPA ID Number		B. State Generator's ID	
				C. State Transporter's ID WV 010638	
				D. Transporter's Phone	



3711808

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 010220

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/24/2018 Vehicle# WHITE TRK Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# DT319 Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295170  
Destination Grid CELL4GRIDE4LIFT5  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

	Time	Scale	Operator	Inbound	Gross	
In	01/24/2018 07:30:29	Inbound	JL		Tare	65100 lb
Out	01/24/2018 07:55:28	Outbound	JL		Net	20220 lb
					Tons	36880 lb
						18.44

Comments

*Randy Hinch*

Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons	100	18.44	Tons				JEFFERSON

Total Tax  
Total Ticket





# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of 1
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (If different than mailing): 365 Granny Smith Ln Kearneysville, WV		A. Manifest Number WMNA 6295174 B. State Generator's ID
5. Transporter 1 Company Name All Construction		6. US EPA ID Number		C. State Transporter's ID 010638 D. Transporter's Phone

Driver's Signature



3711810

LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

Original  
Ticket# 818219

Customer Name	ENVIRONMENTAL RESOURCES MANAG	Carrier	ENVIRONMENTAL RESOUR
Ticket Date	01/24/2018	Vehicle#	TRK 2
Payment Type	Credit Account	Container	Volume
Manual Ticket#		Driver	
Hauling Ticket#		Check#	
Route		Billing #	0000393
State Waste Code		Gen EPA ID	
Manifest	629174	Grid	CELL4GRIDE4LIFT5
Destination			
PO	0346220		
Profile	107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)		
Generator	185-ROXULUSAINC ROXUL USA INC		

Time	Scale	Operator	Inbound	Gross	
In 01/24/2018 07:28:34	Inbound	JL		57180	1b
Out 01/24/2018 07:58:38	Outbound	JL		28500	1b
				28600	1b
				Tons	14.30

Comments

WASTE MANAGEMENT

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons 100		14.30	Tons				JEFFERSON

*J. Moeland*

Total Tax  
Total Ticket







# NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of 009
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): 365 Kearneysville, WV Grady Smith Ln		A. Manifest Number WMNA 6295173
5. Transporter 1 Company Name ALL Construction		6. US EPA ID Number		B. State Generator's ID
				C. State Transporter's ID WV 010638
				D. Transporter's Phone



LCS Services Inc.  
911 Allensville Rd  
Hedgesville, WV, 25427  
Ph: 304-754-9153

3711811

Original  
Ticket# 818218

Customer Name ENVIRONMENTAL RESOURCES MANAG Carrier ENVIRONMENTAL RESOUR  
Ticket Date 01/24/2018 Vehicle# ALL CON Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Hauling Ticket# Check#  
Route Billing # 0000393  
State Waste Code Gen EPA ID  
Manifest 6295173 Grid CELL4GRIDE4LIFT5  
Destination  
PO 0346220  
Profile 107746WV (NON HAZARDOUS PESTICIDE CONTAMINATED SOIL)  
Generator 185-ROXULUSAINC ROXUL USA INC

Time	Scale	Operator	Inbound	Gross
In 01/24/2018 07:27:30	Inbound	JL		73640 lb
Out 01/24/2018 08:00:21	Outbound	JL		30780 lb
				Net 42860 lb
				Tons 21.43

Comments



Product	LDX	Qty	UOM	Rate	Tax	Amount	Origin
1 Spwaste Plant-Tons	100	21.43	Tons				JEFFERSON

Rodney Roberson

Total Tax  
Total Ticket







# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. Generator's ID: 001		Manifest Doc No.		2. Page 1 of 1				
<b>Generator's Name &amp; Mailing Address:</b> ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		<b>Generator's Site Address (if different than mailing):</b> 365 Gramy Smith Ln. Kearneysville, WV 25430		<b>A. Manifest Number</b> WMNA 6295164		<b>B. State Generator's ID</b> State Generator's ID				
<b>5. Transporter 1 Company Name</b> ALL Construction		<b>6. US EPA ID Number</b> US EPA ID Number		<b>C. State Transporter's ID</b> WV010638		<b>D. Transporter's Phone</b> Transporter 1 Phone				
<b>7. Transporter 2 Company Name</b> Transporter 2 Company Name		<b>8. US EPA ID Number</b> US EPA ID Number		<b>E. State Transporter's ID</b> State Transporter ID		<b>F. Transporter's Phone</b> Transporter 2 Phone				
<b>9. Designated Facility Name and Site Address</b> LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427		<b>10. US EPA ID Number</b> US EPA ID Number		<b>G. State Facility ID</b> SWF-1020		<b>H. State Facility Phone</b> 304-754-9153				
<b>GENERATOR</b>	<b>11. Description of Waste Materials</b>			<b>12. Containers</b>		<b>13. Total Quantity</b>	<b>14. Unit Wt./Vol.</b>	<b>I. Misc. Comments</b>		
	<b>a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL</b>			<b>No.</b>	<b>Type</b>					
	<b>WM Profile # 107746WV</b>			1	1048 Bags	1	wt./Vol.	Comment		
	<b>b. Waste Name</b>			<b>No.</b>	<b>Type</b>	<b>Total Qty.</b>	<b>WT./ Vol.</b>	<b>Comments</b>		
	<b>WM Profile # WM Profile Number</b>									
	<b>c. Waste Name</b>			<b>No.</b>	<b>Type</b>	<b>Total Qty.</b>	<b>WT./ Vol.</b>	<b>Comments</b>		
<b>WM Profile # WM Profile Number</b>										
<b>d. Waste Name</b>			<b>No.</b>	<b>Type</b>	<b>Total Qty.</b>	<b>WT./ Vol.</b>	<b>Comments</b>			
<b>WM Profile # WM Profile Number</b>										
<b>J. Additional Descriptions for Materials Listed Above</b> Additional Description			<b>K. Disposal Location</b>							
			<b>Cell</b>		<b>Level</b>					
			<b>Grid</b>							
<b>15. Special Handling Instructions and Additional Information</b> Special Handling Instructions										
<b>Purchase Order #</b> Purchase Order Number <b>EMERGENCY CONTACT / PHONE NO.:</b> KENNETH CAMMARATO / 662-851-4734										
<b>16. GENERATOR'S CERTIFICATE:</b> I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
<b>Printed Name</b> Hugo Schenbach			<b>Signature "On behalf of"</b>				<b>Month</b> 01	<b>Day</b> 22	<b>Year</b> 18	
<b>TRANSPORTER</b>	<b>17. Transporter 1 Acknowledgement of Receipt of Materials</b>			<b>Signature</b>				<b>Month</b> 1	<b>Day</b> 22	<b>Year</b> 2018
	<b>Printed Name</b> Rodney Robinson			<b>Signature</b> Rodney Robinson						
	<b>18. Transporter 2 Acknowledgement of Receipt of Materials</b>			<b>Signature</b>				<b>Month</b>	<b>Day</b>	<b>Year</b>
<b>Printed Name</b>			<b>Signature</b>				<b>Month</b>	<b>Day</b>	<b>Year</b>	
<b>FACILITY</b>	<b>19. Certificate of Final Treatment/Disposal</b> I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.									
	<b>20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.</b>									
	<b>Printed Name</b>			<b>Signature</b>				<b>Month</b>	<b>Day</b>	<b>Year</b>

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>Generator's ID</i>		Manifest Doc No. <i>002</i>		2. Page 1 of <i>1</i>			
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): <i>365 Granny Smith Ln. Kearneysville, WV, 25430</i>		A. Manifest Number <b>WMNA</b>		6295165			
5. Transporter 1 Company Name <i>ALL Construction Inc.</i>		6. US EPA ID Number <i>US EPA ID Number</i>		B. State Generator's ID <i>State Generator's ID</i>					
7. Transporter 2 Company Name <i>Transporter 2 Company Name</i>		8. US EPA ID Number <i>US EPA ID Number</i>		C. State Transporter's ID <i>WV010438</i>					
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427		10. US EPA ID Number <i>US EPA ID Number</i>		D. Transporter's Phone <i>Transporter 1 Phone</i>					
				E. State Transporter's ID <i>State Transporter ID</i>					
				F. Transporter's Phone <i>Transporter 2 Phone</i>					
				G. State Facility ID <b>SWF-1020</b>					
				H. State Facility Phone <b>304-754-9153</b>					
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments		
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL		No.	Type					
	WM Profile # 107746WV		1	10 YD Dump	1	WT./Vol.	Comments		
	b. Waste Name		No.	Type	Total Qty.	WT./Vol.	Comments		
	WM Profile #								
TRANSPORTER	c. Waste Name		No.	Type	Total Qty.	WT./Vol.	Comments		
	WM Profile #								
	d. Waste Name		No.	Type	Total Qty.	WT./Vol.	Comments		
	WM Profile #								
	J. Additional Descriptions for Materials Listed Above		K. Disposal Location						
		Cell				Level			
		Grid							
15. Special Handling Instructions and Additional Information <i>Special Handling Instructions</i>									
Purchase Order # <i>Purchase Order Number</i>				EMERGENCY CONTACT / PHONE NO.: <b>KENNETH CAMMARATO / 662-851-4734</b>					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name <i>Ken Kinnear</i>		Signature "On behalf of" <i>[Signature]</i>				Month <i>01</i>	Day <i>22</i>	Year <i>18</i>	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Printed Name <i>Rodney Rohrbach</i>		Signature <i>[Signature]</i>		Month <i>1</i>	Day <i>22</i>	Year <i>18</i>
	18. Transporter 2 Acknowledgement of Receipt of Materials		Printed Name		Signature		Month	Day	Year
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
Printed Name		Signature				Month	Day	Year	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>003</i>		Manifest Doc No.		2. Page 1 of <i>1</i>				
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734			Generator's Site Address (if different than mailing): <i>365 Granny Smith Ln.</i>			A. Manifest Number <b>WMNA</b> 6295166				
5. Transporter 1 Company Name <i>ALL Construction</i>			6. US EPA ID Number			B. State Generator's ID				
7. Transporter 2 Company Name			8. US EPA ID Number			C. State Transporter's ID <i>WV101638</i>				
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427			10. US EPA ID Number			D. Transporter's Phone				
						E. State Transporter's ID				
						F. Transporter's Phone				
						G. State Facility ID <b>SWF-1020</b>				
						H. State Facility Phone <b>304-754-9153</b>				
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments		
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL			No.	Type					
	WM Profile # 107746WV			1	<i>10 YR DUMP</i>	1	Wt./Vol.	Comments		
	b. Waste Name			No.	Type	Total Qty.	Wt./Vol.	Comments		
	WM Profile # WM Profile Number									
	c. Waste Name			No.	Type	Total Qty.	Wt./Vol.	Comments		
TRANSPORTER	WM Profile # WM Profile Number									
	d. Waste Name			No.	Type	Total Qty.	Wt./Vol.	Comments		
	WM Profile # WM Profile Number									
	J. Additional Descriptions for Materials Listed Above			K. Disposal Location						
			Cell				Level			
			Grid							
15. Special Handling Instructions and Additional Information										
Purchase Order # <i>Purchase Order Number</i> EMERGENCY CONTACT / PHONE NO.: <b>KENNETH CAMMARATO / 662-851-4734</b>										
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
Printed Name <i>JANUSZ TCHOREWSKI</i>			Signature "On behalf of" <i>Jan Tchorowski</i>				Month <i>1</i>	Day <i>22</i>	Year <i>18</i>	
FACILITY	17. Transporter 1 Acknowledgement of Receipt of Materials									
	Printed Name <i>Kodney Rohrbaugh</i>			Signature <i>Kodney Rohrbaugh</i>				Month <i>1</i>	Day <i>22</i>	Year <i>18</i>
	18. Transporter 2 Acknowledgement of Receipt of Materials									
	Printed Name			Signature				Month	Day	Year
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.										
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.										
Printed Name			Signature				Month	Day	Year	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>Generator's ID</i>		Manifest Doc No. <i>604</i>		2. Page 1 of <i>1</i>			
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734				Generator's Site Address (if different than mailing): <i>365 Kearneysville Granny Smith Ln. Kearneysville, WV, 25430</i>		A. Manifest Number <b>WMNA</b> <b>6295167</b>			
5. Transporter 1 Company Name <i>ALL Construction Inc.</i>				6. US EPA ID Number <i>US EPA ID Number</i>		B. State Generator's ID <i>State Generator's ID</i>			
7. Transporter 2 Company Name <i>Transporter 2 Company Name</i>				8. US EPA ID Number <i>US EPA ID Number</i>		C. State Transporter's ID <i>WV010838</i>			
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427				10. US EPA ID Number <i>US EPA ID Number</i>		D. Transporter's Phone <i>Transporter 1 Phone</i>			
						E. State Transporter's ID <i>State Transporter ID</i>			
						F. Transporter's Phone <i>Transporter 2 Phone</i>			
						G. State Facility ID <b>SWF-1020</b>			
						H. State Facility Phone <b>304-754-9153</b>			
G E N E R A T O R	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments	
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL  <b>WM Profile # 107746WV</b>			No.	Type <i>1040 DUMP</i>	1	Wt./Vol.	Comments	
	b. Waste Name  <b>WM Profile #</b>			No.	Type	Total Qty.	Wt./Vol.	Comments	
	c. Waste Name  <b>WM Profile #</b>			No.	Type	Total Qty.	Wt./Vol.	Comments	
	d. Waste Name  <b>WM Profile #</b>			No.	Type	Total Qty.	Wt./Vol.	Comments	
	J. Additional Descriptions for Materials Listed Above			K. Disposal Location					
				Cell	Level				
				Grid					
	15. Special Handling Instructions and Additional Information <i>Special Handling Instructions</i>								
	Purchase Order # <i>Purchase Order Number</i>			EMERGENCY CONTACT / PHONE NO.: <b>KENNETH CAMMARATO / 662-851-4734</b>					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name <i>Wes Lindor</i>			Signature "On behalf of" <i>[Signature]</i>			Month <i>1</i>	Day <i>23</i>	Year <i>18</i>	
T R A N S P O R T E R	17. Transporter 1 Acknowledgement of Receipt of Materials								
	Printed Name <i>Rocky Rohrbaugh</i>			Signature <i>Rocky Rohrbaugh</i>			Month <i>1</i>	Day <i>23</i>	Year <i>18</i>
	18. Transporter 2 Acknowledgement of Receipt of Materials								
Printed Name			Signature			Month	Day	Year	
F A C I L I T Y	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
	Printed Name			Signature			Month	Day	Year

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY  
Pink- FACILITY USE ONLY

Blue- GENERATOR #2 COPY  
Gold- TRANSPORTER #1 COPY

Yellow- GENERATOR #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>Generator's ID</i>	Manifest Doc No. <i>005 Number</i>		2. Page 1 of <i>1 page</i>
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): <i>365 Granny Smith Ln. Kearneysville, WV, 25430</i>		A. Manifest Number <b>WMNA</b>	<b>6295168</b>
5. Transporter 1 Company Name <i>ALL Construction Inc,</i>		6. US EPA ID Number <i>US EPA ID Number</i>		B. State Generator's ID <i>State Generator's ID</i>	
7. Transporter 2 Company Name <i>Transporter 2 Company Name</i>		8. US EPA ID Number <i>US EPA ID Number</i>		C. State Transporter's ID <i>WV010630</i>	
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427		10. US EPA ID Number <i>US EPA ID Number</i>		D. Transporter's Phone <i>Transporter 1 Phone</i>	
				E. State Transporter's ID <i>State Transporter ID</i>	
				F. Transporter's Phone <i>Transporter 2 Phone</i>	
				G. State Facility ID <b>SWF-1020</b>	
				H. State Facility Phone <b>304-754-9153</b>	
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL		No.	Type	14. Unit Wt./Vol.
	WM Profile # 107746WV		1	10 YD DUMP	1
	b. Waste Name		No.	Type	Total Qty.
	WM Profile # WM Profile Number				Wt./Vol.
TRANSPORTER	c. Waste Name		No.	Type	Total Qty.
	WM Profile # WM Profile Number				Wt./Vol.
	d. Waste Name		No.	Type	Total Qty.
	WM Profile # WM Profile Number				Wt./Vol.
J. Additional Descriptions for Materials Listed Above <i>Additional Description</i>			K. Disposal Location		
			Cell	Level	
			Grid		
15. Special Handling Instructions and Additional Information <i>Special Handling Instructions</i>					
Purchase Order # <i>Purchase Order Number</i> EMERGENCY CONTACT / PHONE NO.: KENNETH CAMMARATO / 662-851-4734					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.					
Printed Name <i>Ken Kuden</i>		Signature "On behalf of" <i>[Signature]</i>		Month <i>1</i>	Day <i>23</i>
				Year <i>18</i>	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials				
	Printed Name <i>* Josh Mougold</i>	Signature <i>* [Signature]</i>		Month <i>1</i>	Day <i>23</i>
				Year <i>18</i>	
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials				
	Printed Name	Signature		Month	Day
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.					
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.					
Printed Name		Signature		Month	Day

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Pink- FACILITY USE ONLY

Blue- GENERATOR #2 COPY

Gold- TRANSPORTER #1 COPY

Yellow- GENERATOR #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>Generator's ID</i>		Manifest Doc No. <i>0006</i>		2. Page 1 of <i>1 page</i>			
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734				Generator's Site Address (if different than mailing): <i>365 Granny Smith Ln.</i>		A. Manifest Number <b>WMNA</b> 6295169			
						B. State Generator's ID <i>State Generator's ID</i>			
5. Transporter 1 Company Name <i>All Construction Inc.</i>				6. US EPA ID Number <i>US EPA ID Number</i>		C. State Transporter's ID <i>WV010-638</i>			
						D. Transporter's Phone <i>Transporter 1 Phone</i>			
7. Transporter 2 Company Name <i>Transporter 2 Company Name</i>				8. US EPA ID Number <i>US EPA ID Number</i>		E. State Transporter's ID <i>State Transporter ID</i>			
						F. Transporter's Phone <i>Transporter 2 Phone</i>			
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427				10. US EPA ID Number <i>US EPA ID Number</i>		G. State Facility ID SWF-1020			
						H. State Facility Phone 304-754-9153			
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments	
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL  WM Profile # 107746WV			No.	Type <i>TO 10 DUMP</i>	1	Wt./Vol.	Comments	
	b. Waste Name  WM Profile # WM Profile Number			No.	Type	Total Qty.	Wt./Vol.	Comment	
	c. Waste Name  WM Profile # WM Profile Number			No.	Type	Total Qty.	Wt./Vol.	Comments	
	d. Waste Name  WM Profile # WM Profile Number			No.	Type	Total Qty.	Wt./Vol.	Comments	
	J. Additional Descriptions for Materials Listed Above <i>Additional Description</i>			K. Disposal Location					
			Cell				Level		
			Grid						
15. Special Handling Instructions and Additional Information <i>Special Handling Instructions</i>									
Purchase Order # <i>Purchase Order Number</i> EMERGENCY CONTACT / PHONE NO.: KENNETH CAMMARATO / 662-851-4734									
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name <i>Ken Kincaid</i>			Signature "On behalf of" <i>[Signature]</i>				Month	Day	Year
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials								
	Printed Name <i>Rodney Rohrer</i>			Signature <i>Rodney Rohrer</i>				Month	Day
							1	23	18
18. Transporter 2 Acknowledgement of Receipt of Materials									
Printed Name			Signature				Month	Day	Year
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
Printed Name			Signature				Month	Day	Year

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. Generator's ID: 007		Manifest Doc No. 007		2. Page 1 of 1				
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734				Generator's Site Address (if different than mailing): 365 Granny Smith Ln Kearneysville, WV, 25064		A. Manifest Number WMNA 6295170				
5. Transporter 1 Company Name ALL Construction				6. US EPA ID Number		B. State Generator's ID State Generator's ID				
7. Transporter 2 Company Name				8. US EPA ID Number		C. State Transporter's ID WV 010638				
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427				10. US EPA ID Number		D. Transporter's Phone				
						E. State Transporter's ID				
						F. Transporter's Phone				
						G. State Facility ID SWF-1020				
						H. State Facility Phone 304-754-9153				
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	15. Misc. Comments		
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL			No.	Type					
	WM Profile # 107746WV			1	type	1	wt / vol	Comments		
	b. Waste Name			No.	Type	Total Qty.	Wt./Vol.	Comments		
	WM Profile # WM Profile Number									
TRANSPORTER	c. Waste Name			No.	Type	Total Qty.	Wt./Vol.	Comments		
	WM Profile # WM Profile Number									
	d. Waste Name			No.	Type	Total Qty.	Wt./Vol.	Comments		
	WM Profile # WM Profile Number									
FACILITY	J. Additional Descriptions for Materials Listed Above			K. Disposal Location						
	Additional Description			Cell	Level					
				Grid						
15. Special Handling Instructions and Additional Information										
Purchase Order # Purchase Order Number EMERGENCY CONTACT / PHONE NO.: KENNETH CAMMARATO / 662-851-4734										
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
Printed Name			Signature "On behalf of"				Month	Day	Year	
DAN BARNES			[Signature] "Roxul"				1	24	18	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials									
	Printed Name			Signature				Month	Day	Year
	TERRY HINWICK			[Signature]				1	24	18
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials									
	Printed Name			Signature				Month	Day	Year
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.										
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.										
Printed Name			Signature				Month	Day	Year	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>Generator's ID</i>		Manifest Doc No. <i>Number</i>		2. Page 1 of <i>008</i>			
<b>Generator's Name &amp; Mailing Address:</b> ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		<b>Generator's Site Address (If different than mailing):</b> <i>365 Granny Smith Ln Kearneysville, WV</i>		<b>A. Manifest Number</b> <b>WMNA</b>		<b>6295174</b>			
<b>5. Transporter 1 Company Name</b> <i>ALL Construction</i>		<b>6. US EPA ID Number</b> <i>US EPA ID Number</i>		<b>B. State Generator's ID</b> <i>State Generator's ID</i>					
<b>7. Transporter 2 Company Name</b> <i>Transporter 2 Company Name</i>		<b>8. US EPA ID Number</b> <i>US EPA ID Number</i>		<b>C. State Transporter's ID</b> <i>010638</i>					
<b>9. Designated Facility Name and Site Address</b> LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427		<b>10. US EPA ID Number</b> <i>US EPA ID Number</i>		<b>D. Transporter's Phone</b> <i>Transporter 1 Phone</i>					
				<b>E. State Transporter's ID</b> <i>State transporter ID</i>					
				<b>F. Transporter's Phone</b> <i>Transporter 2 Phone</i>					
				<b>G. State Facility ID</b> <b>SWF-1020</b>					
				<b>H. State Facility Phone</b> <b>304-754-9153</b>					
<b>GENERATOR</b>	<b>11. Description of Waste Materials</b>			<b>12. Containers</b>		<b>13. Total Quantity</b>	<b>14. Unit Wt./Vol.</b>	<b>I. Misc. Comments</b>	
	<b>a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL</b>			<b>No.</b>	<b>Type</b>				
	<b>WM Profile # 107746WV</b>			<b>1</b>	<b>TYPE</b>	<b>1</b>	<b>Wt./Vol</b>	<b>Comments</b>	
<b>GENERATOR</b>	<b>b. Waste Name</b>			<b>No.</b>	<b>Type</b>	<b>Total Qty.</b>	<b>Wt./Vol</b>	<b>Comments</b>	
	<b>WM Profile # WM Profile Number</b>								
<b>GENERATOR</b>	<b>c. Waste Name</b>			<b>No.</b>	<b>Type</b>	<b>Total Qty.</b>	<b>Wt./Vol</b>	<b>Comments</b>	
	<b>WM Profile # WM Profile Number</b>								
<b>GENERATOR</b>	<b>d. Waste Name</b>			<b>No.</b>	<b>Type</b>	<b>Total Qty.</b>	<b>Wt./Vol</b>	<b>Comments</b>	
	<b>WM Profile # WM Profile Number</b>								
<b>J. Additional Descriptions for Materials Listed Above</b> <i>Additional Description</i>				<b>K. Disposal Location</b>					
				<b>Cell</b>	<b>Level</b>				
				<b>Grid</b>					
<b>15. Special Handling Instructions and Additional Information</b> <i>Special Handling Instructions</i>									
<b>Purchase Order #</b> <i>Purchase Order Number</i> <b>EMERGENCY CONTACT / PHONE NO.:</b> <b>KENNETH CAMMARATO / 662-851-4734</b>									
<b>16. GENERATOR'S CERTIFICATE:</b> I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
<b>Printed Name</b> <i>Ryan Briden</i>				<b>Signature "On behalf of"</b> <i>Ryan Briden "Roxul"</i>			<b>Month</b> <i>1</i>	<b>Day</b> <i>24</i>	<b>Year</b> <i>18</i>
<b>TRANSPORTER</b>	<b>17. Transporter 1 Acknowledgement of Receipt of Materials</b>								
	<b>Printed Name</b> <i>John Moreland</i>		<b>Signature</b> <i>John Moreland</i>		<b>Month</b> <i>1</i>	<b>Day</b> <i>24</i>	<b>Year</b> <i>18</i>		
<b>TRANSPORTER</b>	<b>18. Transporter 2 Acknowledgement of Receipt of Materials</b>								
	<b>Printed Name</b>		<b>Signature</b>		<b>Month</b>	<b>Day</b>	<b>Year</b>		
<b>FACILITY</b>	<b>19. Certificate of Final Treatment/Disposal</b> I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	<b>20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.</b>								
	<b>Printed Name</b>				<b>Signature</b>		<b>Month</b>	<b>Day</b>	<b>Year</b>

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Pink- FACILITY USE ONLY

Blue- GENERATOR #2 COPY

Gold- TRANSPORTER #1 COPY

Yellow- GENERATOR #1 COPY





# NON-HAZARDOUS MANIFEST

<b>NON-HAZARDOUS MANIFEST</b>		1. Generator's US EPA ID No. <i>Generator's ID</i>		Manifest Doc No. <i>Number</i>		2. Page 1 of <i>009</i>			
Generator's Name & Mailing Address: ROXUL USA INC 71 EDMOND ROAD KEARNEYSVILLE, WV 25430 Generator's Phone 662-851-4734		Generator's Site Address (if different than mailing): <i>365 Kearneysville, WV</i> <i>Granny Smith Ln</i>		A. Manifest Number <b>WMNA</b>		6295173			
5. Transporter 1 Company Name <i>ALL Construction</i>		6. US EPA ID Number <i>US EPA ID Number</i>		C. State Transporter's ID <i>WV 010638</i>		D. Transporter's Phone <i>Transporter's Phone</i>			
7. Transporter 2 Company Name <i>Transporter 2 Company Name</i>		8. US EPA ID Number <i>US EPA ID Number</i>		E. State Transporter's ID <i>State Transporter ID</i>		F. Transporter's Phone <i>Transporter's Phone</i>			
9. Designated Facility Name and Site Address LCS SERVICES LANDFILL 911 ALLENSVILLE ROAD HEDGESVILLE, WV 25427		10. US EPA ID Number <i>US EPA ID Number</i>		G. State Facility ID <b>SWF-1020</b>		H. State Facility Phone <b>304-754-9153</b>			
GENERATOR	11. Description of Waste Materials		12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments		
	a. NON HAZARDOUS PESTICIDE CONTAMINATED SOIL  <b>WM Profile # 107746WV</b>		No.	Type					
			1	Type	1	Wt./Vol.	Comments		
	b. Waste Name  <b>WM Profile # WM Profile Number</b>		No.	Type	Total Qty.	Wt./Vol.	Comments		
	c. Waste Name  <b>WM Profile # WM Profile Number</b>		No.	Type	Total Qty.	Wt./Vol.	Comments		
d. Waste Name  <b>WM Profile # WM Profile Number</b>		No.	Type	Total Qty.	Wt./Vol.	Comments			
J. Additional Descriptions for Materials Listed Above <i>Additional Description</i>		K. Disposal Location							
		Cell				Level			
		Grid							
15. Special Handling Instructions and Additional Information <i>Special Handling Instructions</i>									
Purchase Order # <i>Purchase Order Number</i>				EMERGENCY CONTACT / PHONE NO.: <b>KENNETH CAMMARATO / 662-851-4734</b>					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name <i>Ryan Baisden</i>		Signature "On behalf of" <i>Ryan Baisden</i> "Roxul"				Month <i>1</i>	Day <i>24</i>	Year <i>18</i>	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials								
	Printed Name <i>Rodney Rohrbaugh</i>		Signature <i>Rodney Rohrbaugh</i>				Month <i>1</i>	Day <i>24</i>	Year <i>18</i>
18. Transporter 2 Acknowledgement of Receipt of Materials									
Printed Name		Signature				Month	Day	Year	
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
Printed Name		Signature				Month	Day	Year	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY  
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Gold- TRANSPORTER #1 COPY

Yellow- GENERATOR #1 COPY



## **Attachment 4 Photo Log**

**Environmental Resources Management,**  
204 Chase Drive  
Hurricane, West Virginia 25526  
(304) 757-4777



*Photo No. 1 Excavation Marked Prior to Digging*



*Photo No. 2 Excavator Mobilizing to Excavation*





*Photo No. 3 Excavation at Approximately Twenty-Five Percent Completion*



*Photo No. 4 Excavation at Approximately Fifty Percent Completion*





*Photo No. 5 Excavation at Approximately Seventy-Five Percent Completion*



*Photo No. 6 Completed Excavation with Confirmation Sample Locations*





*Photo No. 7 Completed Excavation with Confirmation Sample Locations*

**Attachment 5**  
**Table 1: Confirmation Sampling Results**

**Environmental Resources Management,**  
204 Chase Drive  
Hurricane, West Virginia 25526  
(304) 757-4777



**Attachment 5 - Table 1 -Mixing Area Confirmation Sample Soil Analytical Results - Priority Pollutant Pesticides**

**Project Shuttle  
Jefferson Orchard Site  
Jefferson County, West Virginia**

Constituent	Industrial Soil De Minimis Standards <sup>1</sup> (mg/kg)	Sample ID	MA-CS-1	MA-CS-2	MA-CS-3	MA-CS-4	MA-CS-5	MA-CS-6	MA-CS-7	MA-CS-8	MA-CS-9
		Date	24-Jan-18	24-Jan-18	24-Jan-18	24-Jan-18	24-Jan-18	24-Jan-18	24-Jan-18	24-Jan-18	24-Jan-18
Priority Pollutant Pesticides											
Aldrin	3.5		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Alpha-BHC	5.6		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Beta-BHC	20		<0.017	<0.018	<0.015	0.0023 J	0.0027 J	<0.012	<0.014	0.0019 J	<0.013
Gamma-BHC	44		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Delta-BHC	NE		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Chlordane	160		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
4,4-DDD	150		<0.017	<0.018	<0.015	0.2	0.012 J	0.0015 J	0.017	0.0072 J	<0.013
4,4-DDE	180		0.04	<0.018	0.010 J	0.28	0.033	0.19	0.066	0.022	<0.013
4,4-DDT	150		0.0064 J	<0.018	0.013 J	10	0.52	0.055	0.35	<0.014	<0.013
Dieldrin	3.8		<0.017	<0.018	0.0021 J	0.062	0.015	0.0025 J	0.027	0.0034 J	<0.013
Endosulfan I	10,000		<0.017	<0.018	<0.015	0.0045 J	<0.013	<0.012	0.0024 J	<0.014	<0.013
Endosulfan II	NE		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	0.0013 J	<0.014	<0.013
Endosulfan sulfate	NE		<0.017	<0.018	<0.015	<0.012	<0.013	0.0023 J	0.0016 J	<0.014	<0.013
Endrin	380		<0.017	<0.018	0.0015 J	<0.012	<0.013	<0.012	0.034	<0.014	<0.013
Endrin aldehyde	NE		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	0.0028 J	<0.014	<0.013
Endrin ketone	NE		<0.017	<0.018	<0.015	0.036	<0.013	<0.012	0.018	<0.014	<0.013
Heptachlor	11		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Heptachlor epoxide	6.2		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Methoxychlor	6,300		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Toxaphene	32		<0.017	<0.018	<0.015	<0.012	<0.013	<0.012	<0.014	<0.014	<0.013
Gamma-Chlordane	NE		<0.017	<0.018	<0.015	0.014	<0.013	<0.012	<0.014	<0.014	<0.013

**Notes:**

<sup>1</sup> - West Virginia Industrial Soil De Minimis Standards (June 2014)

mg/kg - milligram per kilogram

NE - Not Established

**BOLD** - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

**Attachment 6**  
**Soil Analytical Report**

**Environmental Resources Management,**  
204 Chase Drive  
Hurricane, West Virginia 25526  
(304) 757-4777



01-Feb-2018

David Connelly  
ERM, Inc  
204 Chase Drive  
Hurricane, WV 25526

Re: **Roxul Soil Excavation**

Work Order: **18011261**

Dear David,

ALS Environmental received 10 samples on 25-Jan-2018 02:50 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 26.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Kiser".

Electronically approved by: Rebecca Kiser

Rebecca Kiser  
Project Manager

Certificate No: WV: 355

### Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Work Order:** 18011261

**Work Order Sample Summary**

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
18011261-01	MA-CS-1 Grab	Soil		1/24/2018 07:05	1/26/2018 10:00	<input type="checkbox"/>
18011261-02	MA-CS-2 Grab	Soil		1/24/2018 07:08	1/26/2018 10:00	<input type="checkbox"/>
18011261-03	MA-CS-3 Grab	Soil		1/24/2018 07:11	1/26/2018 10:00	<input type="checkbox"/>
18011261-04	MA-CS-4 Grab	Soil		1/24/2018 07:14	1/26/2018 10:00	<input type="checkbox"/>
18011261-05	MA-CS-5 Grab	Soil		1/24/2018 07:17	1/26/2018 10:00	<input type="checkbox"/>
18011261-06	MA-CS-6 Grab	Soil		1/24/2018 07:20	1/26/2018 10:00	<input type="checkbox"/>
18011261-07	MA-CS-7 Grab	Soil		1/24/2018 07:23	1/26/2018 10:00	<input type="checkbox"/>
18011261-08	MA-CS-8 Grab	Soil		1/24/2018 07:26	1/26/2018 10:00	<input type="checkbox"/>
18011261-09	MA-CS-9 Grab	Soil		1/24/2018 07:29	1/26/2018 10:00	<input type="checkbox"/>
18011261-10	ER-1 Grab	Water		1/24/2018 08:05	1/26/2018 10:00	<input type="checkbox"/>

---

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Work Order:** 18011261

---

**Case Narrative****QC Comments:**

Batch 113612, Method PESTLVI\_8081\_S, Sample 18011261-07A MS: The MS and/or MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: DDE, DDT

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**WorkOrder:** 18011261

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
µg/Kg	Micrograms per Kilogram
µg/Kg-dry	Micrograms per Kilogram Dry Weight
µg/L	Micrograms per Liter



# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-1 Grab  
**Collection Date:** 1/24/2018 07:05 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-01  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	U		1.9	17	µg/Kg-dry	1	1/31/2018 14:53
4,4'-DDE	40		2.3	17	µg/Kg-dry	1	1/31/2018 14:53
4,4'-DDT	6.4	J	2.4	17	µg/Kg-dry	1	1/31/2018 14:53
Aldrin	U		1.3	17	µg/Kg-dry	1	1/31/2018 14:53
alpha-BHC	U		1.7	17	µg/Kg-dry	1	1/31/2018 14:53
alpha-Chlordane	U		1.7	17	µg/Kg-dry	1	1/31/2018 14:53
beta-BHC	U		1.6	17	µg/Kg-dry	1	1/31/2018 14:53
Chlordane, Technical	U		17	43	µg/Kg-dry	1	1/31/2018 14:53
delta-BHC	U		1.8	17	µg/Kg-dry	1	1/31/2018 14:53
Dieldrin	U		1.9	17	µg/Kg-dry	1	1/31/2018 14:53
Endosulfan I	U		2.1	17	µg/Kg-dry	1	1/31/2018 14:53
Endosulfan II	U		1.5	17	µg/Kg-dry	1	1/31/2018 14:53
Endosulfan sulfate	U		1.7	17	µg/Kg-dry	1	1/31/2018 14:53
Endrin	U		1.8	17	µg/Kg-dry	1	1/31/2018 14:53
Endrin aldehyde	U		3.0	17	µg/Kg-dry	1	1/31/2018 14:53
Endrin ketone	U		1.5	17	µg/Kg-dry	1	1/31/2018 14:53
gamma-BHC (Lindane)	U		1.7	17	µg/Kg-dry	1	1/31/2018 14:53
gamma-Chlordane	U		2.1	17	µg/Kg-dry	1	1/31/2018 14:53
Heptachlor	U		1.3	17	µg/Kg-dry	1	1/31/2018 14:53
Heptachlor epoxide	U		1.7	17	µg/Kg-dry	1	1/31/2018 14:53
Methoxychlor	U		2.2	17	µg/Kg-dry	1	1/31/2018 14:53
Toxaphene	U		19	100	µg/Kg-dry	1	1/31/2018 14:53
Surr: Decachlorobiphenyl	91.8			50-150	%REC	1	1/31/2018 14:53
Surr: Tetrachloro-m-xylene	101			50-150	%REC	1	1/31/2018 14:53
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: RZM
Moisture	26		0.025	0.050	% of sample	1	1/30/2018 17:07

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-2 Grab  
**Collection Date:** 1/24/2018 07:08 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-02  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	U		2.0	18	µg/Kg-dry	1	1/31/2018 15:06
4,4'-DDE	U		2.4	18	µg/Kg-dry	1	1/31/2018 15:06
4,4'-DDT	U		2.5	18	µg/Kg-dry	1	1/31/2018 15:06
Aldrin	U		1.3	18	µg/Kg-dry	1	1/31/2018 15:06
alpha-BHC	U		1.7	18	µg/Kg-dry	1	1/31/2018 15:06
alpha-Chlordane	U		1.8	18	µg/Kg-dry	1	1/31/2018 15:06
beta-BHC	U		1.6	18	µg/Kg-dry	1	1/31/2018 15:06
Chlordane, Technical	U		18	44	µg/Kg-dry	1	1/31/2018 15:06
delta-BHC	U		1.9	18	µg/Kg-dry	1	1/31/2018 15:06
Dieldrin	U		2.0	18	µg/Kg-dry	1	1/31/2018 15:06
Endosulfan I	U		2.2	18	µg/Kg-dry	1	1/31/2018 15:06
Endosulfan II	U		1.6	18	µg/Kg-dry	1	1/31/2018 15:06
Endosulfan sulfate	U		1.7	18	µg/Kg-dry	1	1/31/2018 15:06
Endrin	U		1.8	18	µg/Kg-dry	1	1/31/2018 15:06
Endrin aldehyde	U		3.1	18	µg/Kg-dry	1	1/31/2018 15:06
Endrin ketone	U		1.5	18	µg/Kg-dry	1	1/31/2018 15:06
gamma-BHC (Lindane)	U		1.7	18	µg/Kg-dry	1	1/31/2018 15:06
gamma-Chlordane	U		2.2	18	µg/Kg-dry	1	1/31/2018 15:06
Heptachlor	U		1.3	18	µg/Kg-dry	1	1/31/2018 15:06
Heptachlor epoxide	U		1.7	18	µg/Kg-dry	1	1/31/2018 15:06
Methoxychlor	U		2.3	18	µg/Kg-dry	1	1/31/2018 15:06
Toxaphene	U		19	110	µg/Kg-dry	1	1/31/2018 15:06
Surr: Decachlorobiphenyl	90.2			50-150	%REC	1	1/31/2018 15:06
Surr: Tetrachloro-m-xylene	97.1			50-150	%REC	1	1/31/2018 15:06
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: RZM
Moisture	28		0.025	0.050	% of sample	1	1/30/2018 17:07

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-3 Grab  
**Collection Date:** 1/24/2018 07:11 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-03  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	U		1.7	15	µg/Kg-dry	1	1/31/2018 15:19
<b>4,4'-DDE</b>	<b>10</b>	J	<b>2.0</b>	<b>15</b>	<b>µg/Kg-dry</b>	1	1/31/2018 15:19
<b>4,4'-DDT</b>	<b>13</b>	J	<b>2.1</b>	<b>15</b>	<b>µg/Kg-dry</b>	1	1/31/2018 15:19
Aldrin	U		1.1	15	µg/Kg-dry	1	1/31/2018 15:19
alpha-BHC	U		1.4	15	µg/Kg-dry	1	1/31/2018 15:19
alpha-Chlordane	U		1.5	15	µg/Kg-dry	1	1/31/2018 15:19
beta-BHC	U		1.4	15	µg/Kg-dry	1	1/31/2018 15:19
Chlordane, Technical	U		15	37	µg/Kg-dry	1	1/31/2018 15:19
delta-BHC	U		1.6	15	µg/Kg-dry	1	1/31/2018 15:19
<b>Dieldrin</b>	<b>2.1</b>	J	<b>1.7</b>	<b>15</b>	<b>µg/Kg-dry</b>	1	1/31/2018 15:19
Endosulfan I	U		1.8	15	µg/Kg-dry	1	1/31/2018 15:19
Endosulfan II	U		1.3	15	µg/Kg-dry	1	1/31/2018 15:19
Endosulfan sulfate	U		1.4	15	µg/Kg-dry	1	1/31/2018 15:19
<b>Endrin</b>	<b>1.5</b>	J	<b>1.5</b>	<b>15</b>	<b>µg/Kg-dry</b>	1	1/31/2018 15:19
Endrin aldehyde	U		2.6	15	µg/Kg-dry	1	1/31/2018 15:19
Endrin ketone	U		1.3	15	µg/Kg-dry	1	1/31/2018 15:19
gamma-BHC (Lindane)	U		1.4	15	µg/Kg-dry	1	1/31/2018 15:19
gamma-Chlordane	U		1.8	15	µg/Kg-dry	1	1/31/2018 15:19
Heptachlor	U		1.1	15	µg/Kg-dry	1	1/31/2018 15:19
Heptachlor epoxide	U		1.4	15	µg/Kg-dry	1	1/31/2018 15:19
Methoxychlor	U		1.9	15	µg/Kg-dry	1	1/31/2018 15:19
Toxaphene	U		16	89	µg/Kg-dry	1	1/31/2018 15:19
Surr: Decachlorobiphenyl	89.4			50-150	%REC	1	1/31/2018 15:19
Surr: Tetrachloro-m-xylene	94.4			50-150	%REC	1	1/31/2018 15:19
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: RZM
<b>Moisture</b>	<b>20</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	1/30/2018 17:07

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-4 Grab  
**Collection Date:** 1/24/2018 07:14 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-04  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: <b>KB</b>
4,4'-DDD	200		14	120	µg/Kg-dry	10	2/1/2018 11:09
4,4'-DDE	280		17	120	µg/Kg-dry	10	2/1/2018 11:09
4,4'-DDT	10,000		180	1,200	µg/Kg-dry	100	2/1/2018 11:22
Aldrin	U		0.90	12	µg/Kg-dry	1	1/31/2018 15:58
alpha-BHC	U		1.2	12	µg/Kg-dry	1	1/31/2018 15:58
alpha-Chlordane	U		1.2	12	µg/Kg-dry	1	1/31/2018 15:58
beta-BHC	2.3	J	1.2	12	µg/Kg-dry	1	1/31/2018 15:58
Chlordane, Technical	U		12	31	µg/Kg-dry	1	1/31/2018 15:58
delta-BHC	U		1.3	12	µg/Kg-dry	1	1/31/2018 15:58
Dieldrin	62		1.4	12	µg/Kg-dry	1	1/31/2018 15:58
Endosulfan I	4.5	J	1.5	12	µg/Kg-dry	1	1/31/2018 15:58
Endosulfan II	U		1.1	12	µg/Kg-dry	1	1/31/2018 15:58
Endosulfan sulfate	U		1.2	12	µg/Kg-dry	1	1/31/2018 15:58
Endrin	U		1.3	12	µg/Kg-dry	1	1/31/2018 15:58
Endrin aldehyde	U		2.2	12	µg/Kg-dry	1	1/31/2018 15:58
Endrin ketone	36		1.1	12	µg/Kg-dry	1	1/31/2018 15:58
gamma-BHC (Lindane)	U		1.2	12	µg/Kg-dry	1	1/31/2018 15:58
gamma-Chlordane	14		1.5	12	µg/Kg-dry	1	1/31/2018 15:58
Heptachlor	U		0.93	12	µg/Kg-dry	1	1/31/2018 15:58
Heptachlor epoxide	U		1.2	12	µg/Kg-dry	1	1/31/2018 15:58
Methoxychlor	U		1.6	12	µg/Kg-dry	1	1/31/2018 15:58
Toxaphene	U		13	74	µg/Kg-dry	1	1/31/2018 15:58
Surr: Decachlorobiphenyl	65.0			50-150	%REC	1	1/31/2018 15:58
Surr: Tetrachloro-m-xylene	70.6			50-150	%REC	1	1/31/2018 15:58
<b>MOISTURE</b>							
			Method:SW3550C		Analyst: <b>NW</b>		
Moisture	21		0.025	0.050	% of sample	1	1/31/2018 11:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-5 Grab  
**Collection Date:** 1/24/2018 07:17 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-05  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	12	J	1.4	13	µg/Kg-dry	1	1/31/2018 16:11
4,4'-DDE	33		1.7	13	µg/Kg-dry	1	1/31/2018 16:11
4,4'-DDT	520		18	130	µg/Kg-dry	10	2/1/2018 11:35
Aldrin	U		0.93	13	µg/Kg-dry	1	1/31/2018 16:11
alpha-BHC	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:11
alpha-Chlordane	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:11
beta-BHC	2.7	J	1.2	13	µg/Kg-dry	1	1/31/2018 16:11
Chlordane, Technical	U		13	32	µg/Kg-dry	1	1/31/2018 16:11
delta-BHC	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:11
Dieldrin	15		1.4	13	µg/Kg-dry	1	1/31/2018 16:11
Endosulfan I	U		1.6	13	µg/Kg-dry	1	1/31/2018 16:11
Endosulfan II	U		1.1	13	µg/Kg-dry	1	1/31/2018 16:11
Endosulfan sulfate	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:11
Endrin	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:11
Endrin aldehyde	U		2.2	13	µg/Kg-dry	1	1/31/2018 16:11
Endrin ketone	U		1.1	13	µg/Kg-dry	1	1/31/2018 16:11
gamma-BHC (Lindane)	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:11
gamma-Chlordane	U		1.6	13	µg/Kg-dry	1	1/31/2018 16:11
Heptachlor	U		0.95	13	µg/Kg-dry	1	1/31/2018 16:11
Heptachlor epoxide	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:11
Methoxychlor	U		1.6	13	µg/Kg-dry	1	1/31/2018 16:11
Toxaphene	U		14	76	µg/Kg-dry	1	1/31/2018 16:11
Surr: Decachlorobiphenyl	85.8			50-150	%REC	1	1/31/2018 16:11
Surr: Tetrachloro-m-xylene	93.9			50-150	%REC	1	1/31/2018 16:11
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: NW
Moisture	23		0.025	0.050	% of sample	1	1/31/2018 11:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-6 Grab  
**Collection Date:** 1/24/2018 07:20 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-06  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	1.5	J	1.4	12	µg/Kg-dry	1	1/31/2018 16:24
4,4'-DDE	190		8.1	61	µg/Kg-dry	5	2/1/2018 11:48
4,4'-DDT	55		1.7	12	µg/Kg-dry	1	1/31/2018 16:24
Aldrin	U		0.89	12	µg/Kg-dry	1	1/31/2018 16:24
alpha-BHC	U		1.2	12	µg/Kg-dry	1	1/31/2018 16:24
alpha-Chlordane	U		1.2	12	µg/Kg-dry	1	1/31/2018 16:24
beta-BHC	U		1.1	12	µg/Kg-dry	1	1/31/2018 16:24
Chlordane, Technical	U		12	30	µg/Kg-dry	1	1/31/2018 16:24
delta-BHC	U		1.3	12	µg/Kg-dry	1	1/31/2018 16:24
Dieldrin	2.5	J	1.4	12	µg/Kg-dry	1	1/31/2018 16:24
Endosulfan I	U		1.5	12	µg/Kg-dry	1	1/31/2018 16:24
Endosulfan II	U		1.1	12	µg/Kg-dry	1	1/31/2018 16:24
Endosulfan sulfate	2.3	J	1.2	12	µg/Kg-dry	1	1/31/2018 16:24
Endrin	U		1.3	12	µg/Kg-dry	1	1/31/2018 16:24
Endrin aldehyde	U		2.1	12	µg/Kg-dry	1	1/31/2018 16:24
Endrin ketone	U		1.1	12	µg/Kg-dry	1	1/31/2018 16:24
gamma-BHC (Lindane)	U		1.2	12	µg/Kg-dry	1	1/31/2018 16:24
gamma-Chlordane	U		1.5	12	µg/Kg-dry	1	1/31/2018 16:24
Heptachlor	U		0.91	12	µg/Kg-dry	1	1/31/2018 16:24
Heptachlor epoxide	U		1.2	12	µg/Kg-dry	1	1/31/2018 16:24
Methoxychlor	U		1.6	12	µg/Kg-dry	1	1/31/2018 16:24
Toxaphene	U		13	73	µg/Kg-dry	1	1/31/2018 16:24
Surr: Decachlorobiphenyl	77.0			50-150	%REC	1	1/31/2018 16:24
Surr: Tetrachloro-m-xylene	87.3			50-150	%REC	1	1/31/2018 16:24
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: NW
Moisture	19		0.025	0.050	% of sample	1	1/31/2018 11:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-7 Grab  
**Collection Date:** 1/24/2018 07:23 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-07  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	17		1.5	14	µg/Kg-dry	1	1/31/2018 14:14
4,4'-DDE	66		1.8	14	µg/Kg-dry	1	1/31/2018 14:14
4,4'-DDT	350		19	140	µg/Kg-dry	10	2/1/2018 10:56
Aldrin	U		0.99	14	µg/Kg-dry	1	1/31/2018 14:14
alpha-BHC	U		1.3	14	µg/Kg-dry	1	1/31/2018 14:14
alpha-Chlordane	U		1.4	14	µg/Kg-dry	1	1/31/2018 14:14
beta-BHC	U		1.3	14	µg/Kg-dry	1	1/31/2018 14:14
Chlordane, Technical	U		13	34	µg/Kg-dry	1	1/31/2018 14:14
delta-BHC	U		1.4	14	µg/Kg-dry	1	1/31/2018 14:14
Dieldrin	27		1.5	14	µg/Kg-dry	1	1/31/2018 14:14
Endosulfan I	2.4	J	1.7	14	µg/Kg-dry	1	1/31/2018 14:14
Endosulfan II	1.3	J	1.2	14	µg/Kg-dry	1	1/31/2018 14:14
Endosulfan sulfate	1.6	J	1.3	14	µg/Kg-dry	1	1/31/2018 14:14
Endrin	34		1.4	14	µg/Kg-dry	1	1/31/2018 14:14
Endrin aldehyde	2.8	J	2.4	14	µg/Kg-dry	1	1/31/2018 14:14
Endrin ketone	18		1.2	14	µg/Kg-dry	1	1/31/2018 14:14
gamma-BHC (Lindane)	U		1.3	14	µg/Kg-dry	1	1/31/2018 14:14
gamma-Chlordane	U		1.7	14	µg/Kg-dry	1	1/31/2018 14:14
Heptachlor	U		1.0	14	µg/Kg-dry	1	1/31/2018 14:14
Heptachlor epoxide	U		1.3	14	µg/Kg-dry	1	1/31/2018 14:14
Methoxychlor	U		1.8	14	µg/Kg-dry	1	1/31/2018 14:14
Toxaphene	U		15	81	µg/Kg-dry	1	1/31/2018 14:14
Surr: Decachlorobiphenyl	78.7			50-150	%REC	1	1/31/2018 14:14
Surr: Tetrachloro-m-xylene	93.8			50-150	%REC	1	1/31/2018 14:14
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: NW
Moisture	26		0.025	0.050	% of sample	1	1/31/2018 11:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-8 Grab  
**Collection Date:** 1/24/2018 07:26 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-08  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	U		1.6	14	µg/Kg-dry	1	1/31/2018 16:38
<b>4,4'-DDE</b>	<b>7.2</b>	J	<b>1.9</b>	<b>14</b>	<b>µg/Kg-dry</b>	1	1/31/2018 16:38
<b>4,4'-DDT</b>	<b>22</b>		<b>2.0</b>	<b>14</b>	<b>µg/Kg-dry</b>	1	1/31/2018 16:38
Aldrin	U		1.0	14	µg/Kg-dry	1	1/31/2018 16:38
alpha-BHC	U		1.3	14	µg/Kg-dry	1	1/31/2018 16:38
alpha-Chlordane	U		1.4	14	µg/Kg-dry	1	1/31/2018 16:38
<b>beta-BHC</b>	<b>1.9</b>	J	<b>1.3</b>	<b>14</b>	<b>µg/Kg-dry</b>	1	1/31/2018 16:38
Chlordane, Technical	U		14	35	µg/Kg-dry	1	1/31/2018 16:38
delta-BHC	U		1.5	14	µg/Kg-dry	1	1/31/2018 16:38
<b>Dieldrin</b>	<b>3.4</b>	J	<b>1.6</b>	<b>14</b>	<b>µg/Kg-dry</b>	1	1/31/2018 16:38
Endosulfan I	U		1.7	14	µg/Kg-dry	1	1/31/2018 16:38
Endosulfan II	U		1.2	14	µg/Kg-dry	1	1/31/2018 16:38
Endosulfan sulfate	U		1.3	14	µg/Kg-dry	1	1/31/2018 16:38
<b>Endrin</b>	<b>1.7</b>	J	<b>1.4</b>	<b>14</b>	<b>µg/Kg-dry</b>	1	1/31/2018 16:38
Endrin aldehyde	U		2.4	14	µg/Kg-dry	1	1/31/2018 16:38
Endrin ketone	U		1.2	14	µg/Kg-dry	1	1/31/2018 16:38
gamma-BHC (Lindane)	U		1.3	14	µg/Kg-dry	1	1/31/2018 16:38
gamma-Chlordane	U		1.7	14	µg/Kg-dry	1	1/31/2018 16:38
Heptachlor	U		1.0	14	µg/Kg-dry	1	1/31/2018 16:38
Heptachlor epoxide	U		1.3	14	µg/Kg-dry	1	1/31/2018 16:38
Methoxychlor	U		1.8	14	µg/Kg-dry	1	1/31/2018 16:38
Toxaphene	U		15	83	µg/Kg-dry	1	1/31/2018 16:38
Surr: Decachlorobiphenyl	76.3			50-150	%REC	1	1/31/2018 16:38
Surr: Tetrachloro-m-xylene	92.8			50-150	%REC	1	1/31/2018 16:38
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: NW
<b>Moisture</b>	<b>30</b>		<b>0.025</b>	<b>0.050</b>	<b>% of sample</b>	1	1/31/2018 11:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** MA-CS-9 Grab  
**Collection Date:** 1/24/2018 07:29 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-09  
**Matrix:** SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3546 / 1/31/18		Analyst: KB
4,4'-DDD	U		1.5	13	µg/Kg-dry	1	1/31/2018 16:51
4,4'-DDE	U		1.8	13	µg/Kg-dry	1	1/31/2018 16:51
4,4'-DDT	U		1.9	13	µg/Kg-dry	1	1/31/2018 16:51
Aldrin	U		0.98	13	µg/Kg-dry	1	1/31/2018 16:51
alpha-BHC	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:51
alpha-Chlordane	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:51
beta-BHC	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:51
Chlordane, Technical	U		13	34	µg/Kg-dry	1	1/31/2018 16:51
delta-BHC	U		1.4	13	µg/Kg-dry	1	1/31/2018 16:51
Dieldrin	U		1.5	13	µg/Kg-dry	1	1/31/2018 16:51
Endosulfan I	U		1.7	13	µg/Kg-dry	1	1/31/2018 16:51
Endosulfan II	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:51
Endosulfan sulfate	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:51
Endrin	U		1.4	13	µg/Kg-dry	1	1/31/2018 16:51
Endrin aldehyde	U		2.3	13	µg/Kg-dry	1	1/31/2018 16:51
Endrin ketone	U		1.2	13	µg/Kg-dry	1	1/31/2018 16:51
gamma-BHC (Lindane)	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:51
gamma-Chlordane	U		1.7	13	µg/Kg-dry	1	1/31/2018 16:51
Heptachlor	U		1.0	13	µg/Kg-dry	1	1/31/2018 16:51
Heptachlor epoxide	U		1.3	13	µg/Kg-dry	1	1/31/2018 16:51
Methoxychlor	U		1.7	13	µg/Kg-dry	1	1/31/2018 16:51
Toxaphene	U		14	81	µg/Kg-dry	1	1/31/2018 16:51
Surr: Decachlorobiphenyl	83.8			50-150	%REC	1	1/31/2018 16:51
Surr: Tetrachloro-m-xylene	100			50-150	%REC	1	1/31/2018 16:51
<b>MOISTURE</b>							
			Method:SW3550C				Analyst: NW
Moisture	27		0.025	0.050	% of sample	1	1/31/2018 11:45

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group, USA

Date: 01-Feb-18

**Client:** ERM, Inc  
**Project:** Roxul Soil Excavation  
**Sample ID:** ER-1 Grab  
**Collection Date:** 1/24/2018 08:05 AM

**Work Order:** 18011261  
**Lab ID:** 18011261-10  
**Matrix:** WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>PESTICIDES</b>							
			Method:SW8081A		Prep: SW3511 / 1/30/18		Analyst: KB
4,4'-DDD	0.43		0.0027	0.020	µg/L	1	1/30/2018 18:44
4,4'-DDE	0.53		0.0034	0.020	µg/L	1	1/30/2018 18:44
4,4'-DDT	4.2		0.025	0.20	µg/Kg	10	1/31/2018 13:34
Aldrin	U		0.0046	0.010	µg/L	1	1/30/2018 18:44
alpha-BHC	U		0.0023	0.010	µg/L	1	1/30/2018 18:44
alpha-Chlordane	U		0.0032	0.020	µg/L	1	1/30/2018 18:44
beta-BHC	U		0.0086	0.010	µg/L	1	1/30/2018 18:44
Chlordane, Technical	U		0.034	0.50	µg/L	1	1/30/2018 18:44
delta-BHC	U		0.014	0.020	µg/L	1	1/30/2018 18:44
Dieldrin	0.43		0.0026	0.020	µg/L	1	1/30/2018 18:44
Endosulfan I	0.15		0.0027	0.020	µg/L	1	1/30/2018 18:44
Endosulfan II	0.11		0.0043	0.020	µg/L	1	1/30/2018 18:44
Endosulfan sulfate	0.056		0.0082	0.020	µg/L	1	1/30/2018 18:44
Endrin	1.1		0.0090	0.10	µg/Kg	5	1/31/2018 13:21
Endrin aldehyde	0.065		0.0081	0.020	µg/L	1	1/30/2018 18:44
Endrin ketone	0.60		0.0044	0.020	µg/L	1	1/30/2018 18:44
gamma-BHC (Lindane)	U		0.0022	0.010	µg/L	1	1/30/2018 18:44
gamma-Chlordane	0.0098	J	0.0034	0.020	µg/L	1	1/30/2018 18:44
Heptachlor	U		0.0034	0.010	µg/L	1	1/30/2018 18:44
Heptachlor epoxide	0.075		0.0029	0.010	µg/L	1	1/30/2018 18:44
Methoxychlor	U		0.0015	0.040	µg/L	1	1/30/2018 18:44
Toxaphene	U		0.11	2.0	µg/L	1	1/30/2018 18:44
Surr: Decachlorobiphenyl	83.3			50-150	%REC	1	1/30/2018 18:44
Surr: Tetrachloro-m-xylene	79.5			50-150	%REC	1	1/30/2018 18:44

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



**Client:** ERM, Inc  
**Work Order:** 18011261  
**Project:** Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: **113577** Instrument ID **GC12** Method: **SW8081A**

MBLK		Sample ID: <b>PBLKW1-113577-113577</b>				Units: <b>µg/L</b>		Analysis Date: <b>1/30/2018 05:06 PM</b>			
Client ID:		Run ID: <b>GC12_180130A</b>				SeqNo: <b>4870815</b>		Prep Date: <b>1/30/2018</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	0.0027	0.020								
4,4'-DDE	U	0.0034	0.020								
4,4'-DDT	U	0.0025	0.020								
Aldrin	U	0.0046	0.010								
alpha-BHC	U	0.0023	0.010								
alpha-Chlordane	U	0.0032	0.020								
beta-BHC	U	0.0086	0.010								
Chlordane, Technical	U	0.034	0.50								
delta-BHC	U	0.014	0.020								
Dieldrin	U	0.0026	0.020								
Endosulfan I	U	0.0027	0.020								
Endosulfan II	U	0.0043	0.020								
Endosulfan sulfate	U	0.0082	0.020								
Endrin	U	0.0018	0.020								
Endrin aldehyde	U	0.0081	0.020								
Endrin ketone	U	0.0044	0.020								
gamma-BHC (Lindane)	U	0.0022	0.010								
gamma-Chlordane	U	0.0034	0.020								
Heptachlor	U	0.0034	0.010								
Heptachlor epoxide	U	0.0029	0.010								
Methoxychlor	U	0.0015	0.040								
Toxaphene	U	0.11	2.0								
<i>Surr: Decachlorobiphenyl</i>											
	0.19	0	0	0.208	0	91.4	50-150	0			
<i>Surr: Tetrachloro-m-xylene</i>											
	0.1761	0	0	0.208	0	84.7	50-150	0			

MBLK		Sample ID: <b>PBLKW1-113577-113577</b>				Units: <b>µg/L</b>		Analysis Date: <b>1/30/2018 05:06 PM</b>			
Client ID:		Run ID: <b>GC12_180130A</b>				SeqNo: <b>4870823</b>		Prep Date: <b>1/30/2018</b>		DF: <b>1</b>	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chlordane, Technical	U	0.034	0.50								
Endrin	U	0.0027	0.020								
gamma-BHC (Lindane)	U	0.0024	0.010								
Heptachlor	U	0.003	0.010								
Heptachlor epoxide	U	0.0025	0.010								
Methoxychlor	U	0.0039	0.040								
Toxaphene	U	0.11	2.0								
<i>Surr: Decachlorobiphenyl</i>											
	0.19	0	0	0.208	0	91.4	50-150	0			
<i>Surr: Tetrachloro-m-xylene</i>											
	0.1761	0	0	0.208	0	84.7	50-150	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

## QC BATCH REPORT

Batch ID: 113577 Instrument ID GC12 Method: SW8081A

LCS		Sample ID: PLCSW1-113577-113577				Units: µg/L			Analysis Date: 1/30/2018 05:21 PM		
Client ID:		Run ID: GC12_180130A				SeqNo: 4870816			Prep Date: 1/30/2018		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.2159	0.0027	0.020	0.167	0	129	50-150	0			
4,4'-DDE	0.193	0.0034	0.020	0.167	0	116	50-150	0			
4,4'-DDT	0.1663	0.0025	0.020	0.167	0	99.6	50-150	0			
Aldrin	0.1795	0.0046	0.010	0.167	0	107	50-150	0			
alpha-BHC	0.191	0.0023	0.010	0.167	0	114	50-150	0			
alpha-Chlordane	0.184	0.0032	0.020	0.167	0	110	50-150	0			
beta-BHC	0.1493	0.0086	0.010	0.167	0	89.4	50-150	0			
delta-BHC	0.1774	0.014	0.020	0.167	0	106	50-150	0			
Dieldrin	0.1892	0.0026	0.020	0.167	0	113	50-150	0			
Endosulfan I	0.1871	0.0027	0.020	0.167	0	112	50-150	0			
Endosulfan II	0.1929	0.0043	0.020	0.167	0	116	50-150	0			
Endosulfan sulfate	0.1969	0.0082	0.020	0.167	0	118	50-150	0			
Endrin	0.1798	0.0018	0.020	0.167	0	108	50-150	0			
Endrin aldehyde	0.181	0.0081	0.020	0.167	0	108	50-150	0			
Endrin ketone	0.2009	0.0044	0.020	0.167	0	120	50-150	0			
gamma-BHC (Lindane)	0.1846	0.0022	0.010	0.167	0	111	50-150	0			
gamma-Chlordane	0.1863	0.0034	0.020	0.167	0	112	50-150	0			
Heptachlor	0.1932	0.0034	0.010	0.167	0	116	50-150	0			
Heptachlor epoxide	0.1787	0.0029	0.010	0.167	0	107	50-150	0			
Methoxychlor	0.1704	0.0015	0.040	0.167	0	102	50-150	0			
Surr: Decachlorobiphenyl	0.1858	0	0	0.208	0	89.3	50-150	0			
Surr: Tetrachloro-m-xylene	0.1942	0	0	0.208	0	93.4	50-150	0			

LCS		Sample ID: PLCSW1-113577-113577				Units: µg/L			Analysis Date: 1/30/2018 05:21 PM		
Client ID:		Run ID: GC12_180130A				SeqNo: 4870824			Prep Date: 1/30/2018		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Endrin	0.1798	0.0027	0.020	0.167	0	108	50-150	0			
gamma-BHC (Lindane)	0.1846	0.0024	0.010	0.167	0	111	50-150	0			
Heptachlor	0.1932	0.003	0.010	0.167	0	116	50-150	0			
Heptachlor epoxide	0.1787	0.0025	0.010	0.167	0	107	50-150	0			
Methoxychlor	0.1704	0.0039	0.040	0.167	0	102	50-150	0			
Surr: Decachlorobiphenyl	0.1858	0	0	0.208	0	89.3	50-150	0			
Surr: Tetrachloro-m-xylene	0.1942	0	0	0.208	0	93.4	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: 113577 Instrument ID GC12 Method: SW8081A

MS Sample ID: 18011262-01B MS					Units: µg/L			Analysis Date: 1/30/2018 06:01 PM			
Client ID:		Run ID: GC12_180130A			SeqNo: 4870819		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	0.2111	0.0027	0.020	0.167	0	126	50-150	0			
4,4'-DDE	0.1897	0.0034	0.020	0.167	0	114	50-150	0			
4,4'-DDT	0.1774	0.0025	0.020	0.167	0	106	50-150	0			
Aldrin	0.1778	0.0046	0.010	0.167	0	106	50-150	0			
alpha-BHC	0.1889	0.0023	0.010	0.167	0	113	50-150	0			
alpha-Chlordane	0.181	0.0032	0.020	0.167	0	108	50-150	0			
beta-BHC	0.1504	0.0086	0.010	0.167	0	90.1	50-150	0			
delta-BHC	0.1774	0.014	0.020	0.167	0	106	50-150	0			
Dieldrin	0.191	0.0026	0.020	0.167	0.002867	113	50-150	0			
Endosulfan I	0.1916	0.0027	0.020	0.167	0	115	50-150	0			
Endosulfan II	0.191	0.0043	0.020	0.167	0	114	50-150	0			
Endosulfan sulfate	0.1977	0.0082	0.020	0.167	0	118	50-150	0			
Endrin	0.2252	0.0018	0.020	0.167	0.02798	118	50-150	0			
Endrin aldehyde	0.1737	0.0081	0.020	0.167	0.001833	103	50-150	0			
Endrin ketone	0.208	0.0044	0.020	0.167	0.0054	121	50-150	0			
gamma-BHC (Lindane)	0.1844	0.0022	0.010	0.167	0	110	50-150	0			
gamma-Chlordane	0.1832	0.0034	0.020	0.167	0	110	50-150	0			
Heptachlor	0.1971	0.0034	0.010	0.167	0	118	50-150	0			
Heptachlor epoxide	0.1771	0.0029	0.010	0.167	0	106	50-150	0			
Methoxychlor	0.1766	0.0015	0.040	0.167	0	106	50-150	0			
Surr: Decachlorobiphenyl	0.1919	0	0	0.208	0	92.3	50-150	0			
Surr: Tetrachloro-m-xylene	0.211	0	0	0.208	0	101	50-150	0			

MS Sample ID: 18011262-01B MS					Units: µg/L			Analysis Date: 1/30/2018 06:01 PM			
Client ID:		Run ID: GC12_180130A			SeqNo: 4870827		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Endrin	0.2252	0.0027	0.020	0.167	0.02798	118	50-150	0			
gamma-BHC (Lindane)	0.1844	0.0024	0.010	0.167	0	110	50-150	0			
Heptachlor	0.1971	0.003	0.010	0.167	0	118	50-150	0			
Heptachlor epoxide	0.1771	0.0025	0.010	0.167	0	106	50-150	0			
Methoxychlor	0.1766	0.0039	0.040	0.167	0	106	50-150	0			
Surr: Decachlorobiphenyl	0.1919	0	0	0.208	0	92.3	50-150	0			
Surr: Tetrachloro-m-xylene	0.211	0	0	0.208	0	101	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: 113577 Instrument ID GC12 Method: SW8081A

DUP Sample ID: 18011262-02B DUP					Units: µg/L			Analysis Date: 1/30/2018 06:30 PM			
Client ID:		Run ID: GC12_180130A			SeqNo:4870821		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	0.0027	0.020	0	0	0	0-0	0.00115	0	50	
4,4'-DDE	0.003483	0.0034	0.020	0	0	0	0-0	0.00305	0	50	J
4,4'-DDT	U	0.0025	0.020	0	0	0	0-0	0.001733	0	50	
Aldrin	U	0.0046	0.010	0	0	0	0-0	0	0	50	
alpha-BHC	U	0.0023	0.010	0	0	0	0-0	0	0	50	
alpha-Chlordane	U	0.0032	0.020	0	0	0		0.001467	0	50	
beta-BHC	U	0.0086	0.010	0	0	0	0-0	0	0	50	
Chlordane, Technical	U	0.034	0.50	0	0	0	0-0	0	0	50	
delta-BHC	U	0.014	0.020	0	0	0	0-0	0	0	50	
Dieldrin	U	0.0026	0.020	0	0	0	0-0	0.001367	0	50	
Endosulfan I	U	0.0027	0.020	0	0	0	0-0	0	0	50	
Endosulfan II	U	0.0043	0.020	0	0	0	0-0	0	0	50	
Endosulfan sulfate	U	0.0082	0.020	0	0	0	0-0	0	0	50	
Endrin	U	0.0018	0.020	0	0	0	0-0	0	0	50	
Endrin aldehyde	U	0.0081	0.020	0	0	0	0-0	0	0	50	
Endrin ketone	U	0.0044	0.020	0	0	0		0	0	50	
gamma-BHC (Lindane)	U	0.0022	0.010	0	0	0	0-0	0	0	50	
gamma-Chlordane	U	0.0034	0.020	0	0	0		0.0008167	0	50	
Heptachlor	U	0.0034	0.010	0	0	0	0-0	0	0	50	
Heptachlor epoxide	U	0.0029	0.010	0	0	0	0-0	0.0009667	0	50	
Methoxychlor	U	0.0015	0.040	0	0	0	0-0	0	0	50	
Toxaphene	U	0.11	2.0	0	0	0	0-0	0	0	50	
Surr: Decachlorobiphenyl	0.1926	0	0	0.208	0	92.6	50-150	0.1897	1.51	50	
Surr: Tetrachloro-m-xylene	0.1841	0	0	0.208	0	88.5	50-150	0.1817	1.32	50	

DUP Sample ID: 18011262-02B DUP					Units: µg/L			Analysis Date: 1/30/2018 06:30 PM			
Client ID:		Run ID: GC12_180130A			SeqNo:4870829		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chlordane, Technical	U	0.034	0.50	0	0	0	0-0	0	0	50	
Endrin	U	0.0027	0.020	0	0	0	0-0	0	0	50	
gamma-BHC (Lindane)	U	0.0024	0.010	0	0	0	0-0	0	0	50	
Heptachlor	U	0.003	0.010	0	0	0	0-0	0	0	50	
Heptachlor epoxide	U	0.0025	0.010	0	0	0	0-0	0.0009667	0	50	
Methoxychlor	U	0.0039	0.040	0	0	0	0-0	0	0	50	
Toxaphene	U	0.11	2.0	0	0	0	0-0	0	0	50	
Surr: Decachlorobiphenyl	0.1926	0	0	0.208	0	92.6	50-150	0.1897	1.51	50	
Surr: Tetrachloro-m-xylene	0.1841	0	0	0.208	0	88.5	50-150	0.1817	1.32	50	

The following samples were analyzed in this batch:

18011261-10A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: 113612 Instrument ID GC12 Method: SW8081A

MBLK		Sample ID: PBLKS1-113612-113612				Units: µg/Kg			Analysis Date: 1/31/2018 01:47 PM		
Client ID:		Run ID: GC12_180131A				SeqNo: 4872416			Prep Date: 1/31/2018		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	U	1.1	10								
4,4'-DDE	U	1.3	10								
4,4'-DDT	U	1.4	10								
Aldrin	U	0.73	10								
alpha-BHC	U	0.96	10								
alpha-Chlordane	U	1	10								
beta-BHC	U	0.93	10								
Chlordane, Technical	U	9.9	25								
delta-BHC	U	1	10								
Dieldrin	U	1.1	10								
Endosulfan I	U	1.2	10								
Endosulfan II	U	0.89	10								
Endosulfan sulfate	U	0.96	10								
Endrin	U	1	10								
Endrin aldehyde	U	1.8	10								
Endrin ketone	U	0.87	10								
gamma-BHC (Lindane)	U	0.97	10								
gamma-Chlordane	U	1.2	10								
Heptachlor	U	0.75	10								
Heptachlor epoxide	U	0.96	10								
Methoxychlor	U	1.3	10								
Toxaphene	U	11	60								
Surr: Decachlorobiphenyl	31.5	0	0	33.3	0	94.6	50-150	0			
Surr: Tetrachloro-m-xylene	33.3	0	0	33.3	0	100	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** ERM, Inc  
**Work Order:** 18011261  
**Project:** Roxul Soil Excavation

## QC BATCH REPORT

Batch ID: **113612**      Instrument ID **GC12**      Method: **SW8081A**

LCS					Sample ID: <b>PLCSS1-113612-113612</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>1/31/2018 02:00 PM</b>		
Client ID:					Run ID: <b>GC12_180131A</b>			SeqNo: <b>4872417</b>		Prep Date: <b>1/31/2018</b>		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	44.26	1.1	10	33.33	0	133	50-150	0				
4,4'-DDE	41.93	1.3	10	33.33	0	126	50-150	0				
4,4'-DDT	46.45	1.4	10	33.33	0	139	50-150	0				
Aldrin	40.18	0.73	10	33.33	0	121	50-150	0				
alpha-BHC	43.38	0.96	10	33.33	0	130	50-150	0				
alpha-Chlordane	40.06	1	10	33.33	0	120	50-150	0				
beta-BHC	38	0.93	10	33.33	0	114	50-150	0				
delta-BHC	42.48	1	10	33.33	0	127	50-150	0				
Dieldrin	41.81	1.1	10	33.33	0	125	50-150	0				
Endosulfan I	40.86	1.2	10	33.33	0	123	50-150	0				
Endosulfan II	39.65	0.89	10	33.33	0	119	50-150	0				
Endosulfan sulfate	39.75	0.96	10	33.33	0	119	50-150	0				
Endrin	45.61	1	10	33.33	0	137	50-150	0				
Endrin aldehyde	37.35	1.8	10	33.33	0	112	50-150	0				
Endrin ketone	40.45	0.87	10	33.33	0	121	50-150	0				
gamma-BHC (Lindane)	41.52	0.97	10	33.33	0	125	50-150	0				
gamma-Chlordane	40.91	1.2	10	33.33	0	123	50-150	0				
Heptachlor	45.82	0.75	10	33.33	0	137	50-150	0				
Heptachlor epoxide	39.47	0.96	10	33.33	0	118	50-150	0				
Methoxychlor	43.06	1.3	10	33.33	0	129	50-150	0				
Surr: Decachlorobiphenyl	31.03	0	0	33.3	0	93.2	50-150	0				
Surr: Tetrachloro-m-xylene	33.87	0	0	33.3	0	102	50-150	0				

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: 113612 Instrument ID GC12 Method: SW8081A

MS Sample ID: 18011261-07A MS					Units: µg/Kg			Analysis Date: 1/31/2018 02:27 PM			
Client ID: MA-CS-7 Grab			Run ID: GC12_180131A			SeqNo: 4872419		Prep Date: 1/31/2018		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4'-DDD	42.71	1.1	9.7	32.23	12.51	93.7	50-150	0			
4,4'-DDE	56.97	1.3	9.7	32.23	48.47	26.4	50-150	0			S
4,4'-DDT	92.36	1.4	9.7	32.23	273.5	-562	50-150	0			SEO
Aldrin	36.92	0.71	9.7	32.23	0	115	50-150	0			
alpha-BHC	40.19	0.93	9.7	32.23	0	125	50-150	0			
alpha-Chlordane	36.03	0.97	9.7	32.23	0	112	50-150	0			
beta-BHC	36.05	0.9	9.7	32.23	0.747	110	50-150	0			
delta-BHC	38.75	1	9.7	32.23	0	120	50-150	0			
Dieldrin	45.35	1.1	9.7	32.23	20.13	78.2	50-150	0			
Endosulfan I	37.06	1.2	9.7	32.23	1.79	109	50-150	0			
Endosulfan II	35.65	0.86	9.7	32.23	0.9383	108	50-150	0			
Endosulfan sulfate	35.56	0.93	9.7	32.23	1.146	107	50-150	0			
Endrin	43.95	1	9.7	32.23	25.25	58	50-150	0			
Endrin aldehyde	32.31	1.7	9.7	32.23	2.053	93.9	50-150	0			
Endrin ketone	40.6	0.84	9.7	32.23	13.01	85.6	50-150	0			
gamma-BHC (Lindane)	39.25	0.94	9.7	32.23	0	122	50-150	0			
gamma-Chlordane	36.85	1.2	9.7	32.23	0.2878	113	50-150	0			
Heptachlor	41.07	0.73	9.7	32.23	0	127	50-150	0			
Heptachlor epoxide	35.94	0.93	9.7	32.23	0	112	50-150	0			
Methoxychlor	37.47	1.2	9.7	32.23	0	116	50-150	0			
Surr: Decachlorobiphenyl	26.92	0	0	32.21	0	83.6	50-150	0			
Surr: Tetrachloro-m-xylene	31.3	0	0	32.21	0	97.2	50-150	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: 113612 Instrument ID GC12 Method: SW8081A

MSD					Sample ID: 18011261-07A MSD			Units: µg/Kg		Analysis Date: 1/31/2018 02:40 PM		
Client ID: MA-CS-7 Grab					Run ID: GC12_180131A			SeqNo: 4872420		Prep Date: 1/31/2018		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
4,4'-DDD	43.14	1.1	9.9	33.02	12.51	92.7	50-150	42.71	0.986	35		
4,4'-DDE	53.32	1.3	9.9	33.02	48.47	14.7	50-150	56.97	6.61	35	S	
4,4'-DDT	95.95	1.4	9.9	33.02	273.5	-538	50-150	92.36	3.82	35	SEO	
Aldrin	37.33	0.72	9.9	33.02	0	113	50-150	36.92	1.1	35		
alpha-BHC	40.99	0.95	9.9	33.02	0	124	50-150	40.19	1.98	35		
alpha-Chlordane	36.33	0.99	9.9	33.02	0	110	50-150	36.03	0.821	35		
beta-BHC	36.82	0.92	9.9	33.02	0.747	109	50-150	36.05	2.09	35		
delta-BHC	39.74	1	9.9	33.02	0	120	50-150	38.75	2.52	35		
Dieldrin	44.46	1.1	9.9	33.02	20.13	73.7	50-150	45.35	1.97	35		
Endosulfan I	37.5	1.2	9.9	33.02	1.79	108	50-150	37.06	1.18	35		
Endosulfan II	36.32	0.88	9.9	33.02	0.9383	107	50-150	35.65	1.86	35		
Endosulfan sulfate	35.99	0.95	9.9	33.02	1.146	106	50-150	35.56	1.22	35		
Endrin	44.32	1	9.9	33.02	25.25	57.8	50-150	43.95	0.822	35		
Endrin aldehyde	32.85	1.7	9.9	33.02	2.053	93.3	50-150	32.31	1.64	35		
Endrin ketone	40.72	0.86	9.9	33.02	13.01	83.9	50-150	40.6	0.289	35		
gamma-BHC (Lindane)	39.97	0.96	9.9	33.02	0	121	50-150	39.25	1.81	35		
gamma-Chlordane	37.11	1.2	9.9	33.02	0.2878	112	50-150	36.85	0.727	35		
Heptachlor	41.6	0.74	9.9	33.02	0	126	50-150	41.07	1.29	35		
Heptachlor epoxide	36.32	0.95	9.9	33.02	0	110	50-150	35.94	1.03	35		
Methoxychlor	37.35	1.3	9.9	33.02	0	113	50-150	37.47	0.313	35		
Surr: Decachlorobiphenyl	26.98	0	0	32.99	0	81.8	50-150	26.92	0.223	35		
Surr: Tetrachloro-m-xylene	31.4	0	0	32.99	0	95.2	50-150	31.3	0.316	35		

The following samples were analyzed in this batch:

18011261-01A	18011261-02A	18011261-03A
18011261-04A	18011261-05A	18011261-06A
18011261-07A	18011261-08A	18011261-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: **R229148** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R229148</b>				Units: % of sample			Analysis Date: <b>1/30/2018 05:07 PM</b>		
Client ID:		Run ID: <b>MOIST_180130D</b>				SeqNo: <b>4871103</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	U	0.025	0.050								

<b>LCS</b>		Sample ID: <b>LCS-R229148</b>				Units: % of sample			Analysis Date: <b>1/30/2018 05:07 PM</b>		
Client ID:		Run ID: <b>MOIST_180130D</b>				SeqNo: <b>4871102</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0			

<b>DUP</b>		Sample ID: <b>18011399-01A DUP</b>				Units: % of sample			Analysis Date: <b>1/30/2018 05:07 PM</b>		
Client ID:		Run ID: <b>MOIST_180130D</b>				SeqNo: <b>4871058</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.9	0.025	0.050	0	0	0	0-0	6.87	0.436	10	

<b>DUP</b>		Sample ID: <b>18011438-07B DUP</b>				Units: % of sample			Analysis Date: <b>1/30/2018 05:07 PM</b>		
Client ID:		Run ID: <b>MOIST_180130D</b>				SeqNo: <b>4871074</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	21.31	0.025	0.050	0	0	0	0-0	22.51	5.48	10	

The following samples were analyzed in this batch:

18011261-01A	18011261-02A	18011261-03A
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Client: ERM, Inc  
 Work Order: 18011261  
 Project: Roxul Soil Excavation

# QC BATCH REPORT

Batch ID: **R229221** Instrument ID **MOIST** Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R229221</b>				Units: % of sample			Analysis Date: <b>1/31/2018 11:45 AM</b>		
Client ID:		Run ID: <b>MOIST_180131A</b>				SeqNo: <b>4873393</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.03	0.025	0.050								J

<b>LCS</b>		Sample ID: <b>LCS-R229221</b>				Units: % of sample			Analysis Date: <b>1/31/2018 11:45 AM</b>		
Client ID:		Run ID: <b>MOIST_180131A</b>				SeqNo: <b>4873392</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.025	0.050	100	0	100	99.5-100.5	0			

<b>DUP</b>		Sample ID: <b>18011008-08B DUP</b>				Units: % of sample			Analysis Date: <b>1/31/2018 11:45 AM</b>		
Client ID:		Run ID: <b>MOIST_180131A</b>				SeqNo: <b>4873378</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.97	0.025	0.050	0	0	0	0-0	16.46	3.02	10	

<b>DUP</b>		Sample ID: <b>18011274-03B DUP</b>				Units: % of sample			Analysis Date: <b>1/31/2018 11:45 AM</b>		
Client ID:		Run ID: <b>MOIST_180131A</b>				SeqNo: <b>4873384</b>			Prep Date:		DF: <b>1</b>
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	19.92	0.025	0.050	0	0	0	0-0	20.49	2.82	10	

The following samples were analyzed in this batch:

18011261-04A	18011261-05A	18011261-06A
18011261-07A	18011261-08A	18011261-09A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



☒ **ALS**  
 1740 Union Carbide Drive  
 South Charleston, WV 25303  
 (Tel) 304.356.3168  
 (Fax) 304.205.6262

# Chain of Custody Form

Page 1 of 1

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☐ **ALS**  
 3352 128th Avenue  
 Holland, Michigan 49424  
 (Tel) 616.399.6070  
 (Fax) 616.399.6185

ALS Project Manager:

ALS Work Order #: 18011261

Customer Information			Project Information					Parameter/Method Request for Analysis												
Purchase Order			Project Name	<u>ROXVL SOIL EXCAVATION</u>					A	<u>PL Pesticides 8081</u>										
Work Order			Project Number						B											
Company Name			Bill To Company						C											
Send Report To	<u>ERM / DAVID CONNELLY</u>		Invoice Attn.	<u>DAVID CONNELLY</u>					D											
Address	<u>204 CHASE DR.</u>		Address						E											
City/State/Zip	<u>HURRICANE, WV, 25524</u>		City/State/Zip						F											
Phone	<u>304 757 4777</u>		Phone						G											
Fax			Fax						H											
e-Mail Address	<u>DAVID.CONNELLY@ERM.COM</u>		<u>RYAN.BAIRDEN@ERM.COM</u>					I												
No.	Sample Description	Comp / Grab	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold		
1	<u>MA-CS-1</u>	<u>6</u>	<u>1/24/18</u>	<u>0705</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
2	<u>MA-CS-2</u>	<u>6</u>	<u>1/24/18</u>	<u>0708</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
3	<u>MA-CS-3</u>	<u>6</u>	<u>1/24/18</u>	<u>0711</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
4	<u>MA-CS-4</u>	<u>6</u>	<u>1/24/18</u>	<u>0714</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
5	<u>MA-CS-5</u>	<u>6</u>	<u>1/24/18</u>	<u>0717</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
6	<u>MA-CS-6</u>	<u>6</u>	<u>1/24/18</u>	<u>0720</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
7	<u>MA-CS-7</u>	<u>6</u>	<u>1/24/18</u>	<u>0723</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
8	<u>MA-CS-8</u>	<u>6</u>	<u>1/24/18</u>	<u>0726</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
9	<u>MA-CS-9</u>	<u>6</u>	<u>1/24/18</u>	<u>0729</u>	<u>Soil</u>	<u>N</u>	<u>1</u>	/												
10	<u>ER-1</u>	<u>6</u>	<u>1/24/18</u>	<u>0805</u>	<u>WATER</u>	<u>N</u>	<u>2</u>	/												
Sampler(s): Please Print & Sign			Shipment Method:		Turnaround Time in Business Days (BD): <input type="checkbox"/> Other <input type="checkbox"/>					Results Due Date:										
<u>RYAN BAIRDEN</u>					<input checked="" type="checkbox"/> 10 BD (STD) <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD															
Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:															
<u>Ryan Bairden</u>	<u>1/25/18</u>	<u>1401</u>	<u>[Signature]</u>	<u>&lt;62</u>																
Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:															
<u>[Signature]</u>	<u>1/25/18</u>	<u>1450</u>	<u>[Signature]</u>	<u>ALS</u>																
Relinquished by:	Date:	Time:	Received by:	Temp:	Notes:															
<u>[Signature]</u>	<u>1/25/18</u>	<u>1700</u>	<u>[Signature]</u>	<u>ALS</u>																
Relinquished by:	Date:	Time:	Received by (Laboratory):	Temp:	Notes:															
			<u>[Signature]</u>	<u>62</u>																
Logged by (Laboratory):			Date:	Time:	Checked by (Laboratory):		QC Package: (Check Box Below)													
							<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Standard QC + Raw Data <input type="checkbox"/> Level IV: SW846 Methods/CLP Other:													

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS

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Sample Receipt Checklist

Client Name: ERM-HURRICANE

Date/Time Received: 25-Jan-18 14:50

Work Order: 18011261

Received by: JAS

Checklist completed by Janet Smith 26-Jan-18  
eSignature Date

Reviewed by: Rebecca Kiser 26-Jan-18  
eSignature Date

Matrices: Soil and Water

Carrier name: Courier

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>&lt;6C</u> <u>IR</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u></u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u></u>		

Login Notes: Holland <6 C

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Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: